# Student Perceptions About Professional Networking: An Initial Exploration

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## Abstract

This paper explores student perceptions about professional networking and potential changes in those perceptions that exposure to course content on such networking may provide. The content is delivered as part of a course in Engineering Leadership at Texas A&M University. It has been established that professional networking is an important endeavor for both students and professionals, and it is critical for those professionals who will enter management and leadership positions. However, research and anecdotal experience have indicated that in many cases both students and practicing professionals shy away from professional networking, and to their detriment. In addition to providing a literature review, we provide background on the course content and detail about the teachings, activities, and a reflection associated with effective professional networking in the class. We also report on the results of two surveys of students in this class to explore their perceptions about professional networking before and after they experience the content. The students' first survey perceptions were generally positive about professional networking. Nevertheless, many felt unskilled, and the prospect provoked anxiety and concerns about manipulating others. Perceptions improved considerably after experiencing the content as students reported feeling better equipped for and less ethically conflicted about professional networking. We conclude by offering suggested guidance that engineering faculty can use to mentor their students in practicing robust networking.

## Introduction

The thought of professional networking often causes anxiety among students. Indeed, this prospect is problematic for working professionals as well. Baber, Waymon, Alphonso, and Wylde [1] state that 80 percent of individuals have beliefs that hinder them from networking at all or doing so effectively. College students often understand that they *should* engage in professional networking, but they commonly feel angst about it. Even when they feel comfortable, students usually misunderstand authentic networking and lack effective knowledge about and skills in it. Yet the advice that students should network is too important to ignore or procrastinate over: professional networking is critical to one's short- and long-term career success. This conclusion is supported by a LinkedIn [2], which found in part that 70 percent of people had a connection at a company where they were hired. The importance of networking certainly holds true for engineers, because over time they will likely

transition into management and leadership roles where the robustness of a person's network really pays off. As educators, it is therefore incumbent on us to help our students gain knowledge, comfort, and skill in professional networking. Accordingly, we make professional networking part of an engineering leadership course at Texas A&M University.

In this paper, we present context on the engineering leadership course, background on professional networking and its importance, and the results of and discussion on two surveys from the course that concern student perceptions about networking. This effort is intended to help both faculty and students themselves to prepare for rewarding success in the endeavors they seek and undertake, both during and after college.

## Background on Engineering Leadership Course

We offer a course in engineering leadership in the Electronic Systems Engineering Technology (ESET) program within the Department of Engineering Technology and Industrial Distribution in the College of Engineering at Texas A&M University. This course is required of ESET majors. It can also be taken as part of a minor in Project Management for any engineering major. Other than these priority paths, any engineering student can enroll in the course, but space is limited for them. Our class sizes typically run over 80 students per semester. The course includes two credit hours of lecture and one for laboratory.

The objective of the course is to help students grow in skills for emotional maturation, collaboration, and team and organizational leadership. The framework for achieving this objective is the surprising similarity of engineering and leadership skills [3]. By understanding relevant characteristics of humans as individuals and in collaboration, we can leverage the systems thinking, problem solving, and creativity and innovation that engineers already possess. Topics we cover in the course include emotional intelligence, motivation, team dynamics, servant leadership, and personal maturation. While engineers resist common paradigms of leadership as contrary to the engineering identity, they nevertheless value superiors who exhibit *servant leadership with technical mastery* [4]. Importantly, this term defines the prototype for engineering leadership.

The required textbook is Herminia Ibarra's [5] outstanding *Act like a leader, think like a leader*. Her thesis is that we learn leadership by practicing it. As indicative of its critical importance, Ibarra devotes fully one of her five chapters to networking. Although the book is geared to professionals, students nevertheless report much in the book that is useful, both for now and certainly, it will be later.

An important touchpoint in addressing student anxiety is to emphasize that they *already* have a network in place as they enter the course. To help reduce anxiety, within five minutes of the start of the first live lecture meeting we have an enjoyable icebreaker so they can meet a new classmate. When we reconvene, I announce, "Congratulations, you've just practiced networking!" to let them in on the previously unstated reason for the exercise. In so doing, students hopefully get the message that networking can be done naturally while doing something else, thereby perhaps reducing some intimidation they may feel about the topic.

In one reflection assignment, students in the course focus on networking. They report their level of comfort with networking and commit to two networking outreach activities. The first is to re-establish a connection with an existing contact, someone with whom they had no interactions in the past year. Examples of such contacts include a teacher, coach, or friend from high school, or an extended family member. This activity is intended as low-risk outreach as the connection exists but has simply gone dormant. The second activity is to make a connection with a new contact. No limit is placed on the nature of the contact: it can be related to career, hobbies, or clubs, for example. Again, this effort is intended to promote the perception of little risk and to mitigate the likelihood of distasteful feelings of inauthenticity. Its purpose is to meet new people while *doing something else.* At the end of the course, students submit a report on their semester's activities of personal growth, and in one of the sections they report on their networking experiences and perceptions.

## Exploration of Networking

To promote better understanding, it is worthwhile to address the nature of networking and its importance to practicing engineers. For clarity, this paper will focus on *strategic or professional networking,* but there are two other types: *personal* and *operational* [5]. Personal networking involves family, friends, and personal interests. Operational networking is what is practiced in conjunction with one's work. For students, their operational network consists of faculty, staff, and other students, and in some cases, it can also include related individuals, e.g., a company sponsor for the senior design project. Unless otherwise noted, we simply use the term *networking* to mean strategic, career, or professional networking.

Ibarra defines *strategic networking* as behaviors that are, "aimed at building, maintaining, and using informal relationships that possess the (potential) benefit of facilitating work-related activities of individuals by voluntarily granting access to resources and maximizing common advantages" (see also [6]). *Facilitating* is the action that directly connects networking to the work of leadership. It is important for engineers and engineering leaders to have solid networks they can call upon to facilitate the work of their teams and organizations in a timely and effective manner. Engineers can exhibit leadership even in entry-level positions but will likely enter supervisory positions where leadership is expected. Hoschette [7] demonstrated that the typical engineering career progresses through a series of promotions. Over years, their work flips from overwhelmingly requiring technical skills to overwhelmingly requiring management and leadership skills.

While leadership has been defined in a multitude of ways (see, e.g., [8]), the facilitation aspect of it focuses on what an individual, regardless of title, does to promote beneficial work and collaboration among others. We prefer to both simplify defining the term and connect it directly to engineering. A generic definition of the *engineering method* applies equally well to both engineering and leadership: "the strategy for causing the best change in a poorly understood or uncertain situation within the available resources" [9]. Restating succinctly, both engineering and leadership are about innovation and optimization–the difference between the disciplines is that engineering operates with physical and logical systems, while in leadership it is with social systems.

Because servant leadership is an important part of the engineering leadership prototype, we connect it to networking. Indeed, one's network brings an important element of service to their co-workers. Successful outcomes for teams and organizations depend on the robustness of the networks of both superiors and subordinates. Ibarra notes the team and organizational benefits that are gained when an individual, notably the manager or leader, has a robust strategic network. These benefits include the ability to marshal information, support, or other resources. The timeliness of accessing these provides what she calls *connective advantage*; we can quickly find resources and apply them where needed, where other avenues may take much more time to develop.

## Addressing Challenges and Traps

Significant challenges present in reaching students about networking, and they mirror those experienced by working professionals [1], [5]. These challenges are: 1) misunderstandings, 2) poor attitudes and beliefs, especially concerning the ethics of networking, 3) engaging with limited networks, and 4) failing to make time for it [2], in part because the payoff is likely delayed. Ibarra uses the term *networking traps* to emphasize that individuals become trapped and stuck to engage in this important effort.

Misunderstandings often lead to poor attitudes and beliefs, so our treatment of them is combined. Regarding these challenges, both students and professionals have come to believe that the purpose of networking is to find my next job. Understandably, students focus on finding permanent employment. Such a primary objective may promote angst and aversion because it easily leads to the belief that networking is one-sided, inauthentic, and manipulative. We applaud students who reach this conclusion because it demonstrates integrity. However, withholding judgment, the conclusion is off target. We network to develop authentic and meaningful connections that will be mutually beneficial; networks run on reciprocity. Baber, et al. [1] highlight this aspect in their definition of networking: "the deliberate and discretionary process of creating, cultivating, and capitalizing on trust-based, mutually beneficial relationships for individual and organizational success."

To help reduce their anxiety, we teach students to approach networking as something that happens naturally while doing something else, e.g., participating in a club or church activity. To solidify authenticity, Clark [10] advises a one-year no-ask policy with new connections, i.e., to avoid asking for *any* favors, even a sneaky ask, until a year has passed from first contact. This promotes concentration on building a genuine friendship or collaboration with no hidden agenda. With this attitude, students are able to maintain a congruent ethical identity [11].

But students may rightly wonder what they have to offer to such budding connections. Accordingly, both Clark [10] and Grant [12] counsel a nobler *giver* mindset. An excellent way for students to do so is to volunteer with the professional chapters of engineering societies [13]. Officers will turn cartwheels over having student volunteers, and students gain prime access to connections that can benefit them in the short-, medium-, and long-term, e.g., that first internship or permanent job. Indeed, those students who demonstrate a giver mindset stand out as quality candidates in recruitment.

Students typically see themselves as the most "junior" member of their network. When we recommend that they become a mentor, they typically believe they will need to work for several years before being able to mentor others. Yet at all stages of one's life, it is important to network with those in more junior positions as well as those in more senior and peer positions. Upper-level university students can connect with and mentor college freshmen and sophomores as well as high school students. During an internship, we invite them to imagine the pride of recommending to their employer a mentee for a future internship.

A related belief is that networking is not *real work*, e.g., it is simply an element of a job search. Such a conclusion can be readily understood for engineering students: there is apparently nothing "technical" about career networking. However, the belief is misplaced because everything an engineer does in practice is impacted by people and the resources they may bring. Having a robust network means that one can marshal more and higher quality resources in a timely manner as well as do the same for others. In short, networking is a key and needed part of *real work*.

The limited network challenge involves those that are personal or operational in nature. As a start, we advise getting around individuals in an industry or segment of an industry of interest to them. The "getting around" activity is espoused by Coleman [14] as the *proximity principle*. In short, it is far easier to develop connections with others when we are in the same "space," whether physical or virtual, e.g., through a social networking affinity group. Social network platforms, notably LinkedIn, provide relatively easy ways to connect with others and can be very beneficial. Davis, Wolff, Forret, and Sullivan [15] found that while the number of connections on LinkedIn was helpful, there were far more networking benefits from one's activity on the platform. Interestingly, solid research has demonstrated that weak, e.g., second- or third-order links in one's network are far more effective than their strong links [12], [16], [17]. As a fictitious example, a student's best friend's mother has a friend who works at Google. The mother provides an introduction, and the rest is up to the student. Therefore, students should not write off the potential power in their existing networks, even within their families.

For the final challenge, students almost universally say they have no time for networking. Of course, there is always urgency with classes and assignments, not to mention enjoying the social life in college. Yet, this is a perennial issue throughout adult life, and one will benefit in the future from action taken today. Hence, we promote connections with people while students are doing activities they already perform or perceive that they would enjoy. For long-term benefit, networking is an activity that benefits from regular and frequent pursuit.

Ultimately, the role of identity is important with developing comfort and skill with networking. Baber, et al. [1] recommend three strategies to develop and nurture a new identity for networking: 1) reframe networking as teaching and giving, 2) risk reaching out, and 3) reinforce the collaborative culture.

## Student Perceptions

A foundational element of emotional intelligence is the position that all change starts with self-awareness, especially regarding one's emotions around a topic of interest. Therefore, it is important to us to gauge student perceptions and the extent to which course content and activities may have

helped them become more comfortable with and skilled in strategic networking. In Fall 2022, we implemented two simple surveys to gain insights on these questions. Both surveys were anonymous.

During the first lecture meeting in Week 1, we invited students to complete a brief survey with two questions. In Week 12, after all networking content and activities were done, we invited them to complete a four-question survey. Likert-scale questions for each survey are provided in Table 1. The final question in each survey offered students an open-ended opportunity to share their thoughts. In Week 1, this question was "Feel free below to write in anything you wish to say about your feelings about networking." In Week 12, the question was "Feel free below to write in anything you wish to say about your feelings about networking and how those feelings may or may not have changed during this semester." For the first survey, $N = 78$, and for the second, $N = 58$. The lower number for the second survey is attributable to lower attendance for that lecture meeting.

| | Question | Range |
|---|---|---|
| Q1, Week 1 | Please select the answer below that most closely matches how comfortable you feel about networking | 1 = very uncomfortable, 7 = very comfortable |
| Q2, Week 12 | As best you can remember, *at the start of the course*, how comfortable did you feel *then* about the prospect of networking? Select the answer that most closely matches your feelings then | 1 = very uncomfortable, 7 = very comfortable |
| Q3, Week 12 | How comfortable do you feel *now, at the present time*, about the prospect of networking? Select the answer that most closely matches your feelings *now* | 1 = very uncomfortable, 7 = very comfortable |
| Q4, Week 12 | Select the answer below that most closely matches your reaction to or evaluation of the course content and activities about networking | 1 = very unhelpful, 7 = very helpful |

Table 1. Survey questions.

*Quantitative Results of Surveys*

The quantitative results of student surveys are provided in Table 2. The first survey demonstrated overall that the comfort students felt with networking was slightly above neutral, i.e., modestly positive. Thirty-nine of 79 students (49%) reported feeling anywhere between "somewhat comfortable" and "very comfortable" with networking. The mean of the comfort level with networking increased by 20.5 percent from Weeks 1 to 12 (Q1 to Q3) and by 47.5 percent within the Week 12 survey, based on the recalled Week 1 comfort (Q2 to Q3). These results are presented in graphical form in Figure 1. Curiously, the recalled comfort level reported in Week 12 was substantially lower than the actual reported values in Week 1.

| | Week 1 | | Week 12 | | |
|---|---|---|---|---|---|
| | Comfort with networking | | Recalled comfort with networking | Comfort with networking | Benefits of course content, activities |
| Mean | 4.31 | | 3.52 | 5.19 | 5.33 |
| Std. dev. | 1.44 | | 1.51 | 1.03 | 1.13 |
| Mode | 5 | | 3 | 5 | 6 |

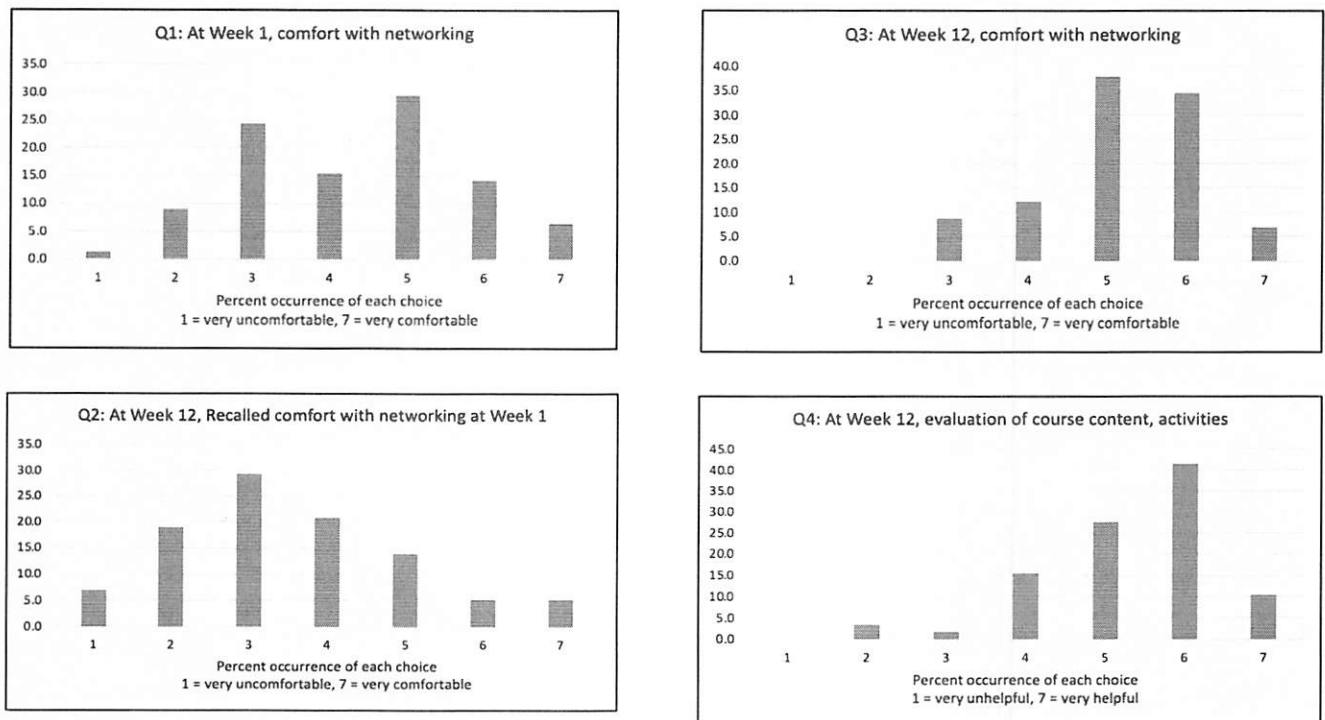Table 2. Quantitative results of survey questions.



Figure 1. Results of survey questions.

*Qualitative Results of Surveys: Themes*

For the open-ended question in the Week 1 survey, there was a range of comments. A sizable number of students reported comfort with and even enthusiasm for networking. There were also many students who expressed high levels of anxiety about initiating connections with others. In keeping with the quantitative results, most responses can be described as reluctance to network that nevertheless can be overcome in certain situations, e.g., when genuinely motivated to do so. There was a general recognition of the importance of developing one's network and clear concerns over the perception of

manipulating others for personal benefit. Some were open to practice networking but felt they lacked knowledge and skills for it.

In the eyes of many students, networking is an intimidating task to take on. Engineering students dedicate themselves to technical work and often neglect the importance of their social presence as a professional. Two selected student replies from the Week 1 survey capture the range of emotions and thoughts they expressed.

> (2 – Quite uncomfortable) "I'm scared of networking because I do not see myself as an asset with enough value or experience to bring something new to the table. I also worry that I'll say or do the wrong thing and ruin my future."

> (7 – Very comfortable) "Networking is quite literally everything. I did an internship with _____ and a CO-OP with _____, and I can tell you half those employees don't do anything remotely technical. Communication is king and knowing people is how you climb the social and political ladder."

Regarding its significance, students *understood* the importance of networking, and they are comfortable with the fact that they need to communicate with others, but were not clear on how to do it, or the reason as to *why* it should be important to them. Those students who were anywhere from very uncomfortable to neutral about networking had concerns about the social aspect of the task. Some students expressed fear and shyness about making connections with others, and some stated discomfort with using their networking skills to benefit their careers. The sentiments of the first student's excerpt above are not uncommon among those entering the workforce as entry-level employees. Concern over falling short with networking is a large contributor to students' distress. Another issue that arises is the feeling of guilt associated with "using" the connections that are made. One student expressed that they find it "difficult to establish connections with strangers knowing that the purpose is to get something from them."

By the time the course reached Week 12, there had been a shift in the students' feelings about networking. In keeping with the quantitative results from the Week 12 survey, many students reported that the course content had a beneficial effect on their level of comfort with and skills in networking. In some cases, the reported effect was slight, in other cases it was substantial, and a few students stated they experienced no change at all. There was a substantive positive shift in perceptions about ethical networking. As one student commented, "I'm not exactly comfortable with networking completely yet but I don't feel as disgusting about it now as I did at the beginning."

Some students had filled the gap between their knowledge of networking and their understanding of its importance. One student explained, "I have always had a positive view of networking but this course has helped me grow and learn the skills to network even better…The importance [of networking] has been broken down and explained to help give a reason as to why all types of networking can be useful". Through reflections, weekly readings, and recitations, students were able to find the "why" behind the need for networking in the professional world. Students were exposed to real-world scenarios including their own professor's experience and opportunities that were presented because of networking. Student comments reflected this shift. Students who expressed a positive

reaction described that their understanding of the necessity of networking had grown. The words "comfortable" and "necessary" were consistently present in their comments.

While some students expressed growth due to the coursework, others did not. One student expressed that they were neutral about the effect on their comfort level with networking. They wrote "I feel like I am already pretty comfortable with networking. I don't believe anything in this course has actively aided me with networking, but that is not to say it isn't useful to some nor to say that it isn't useful in any way."

## Discussion

In our engineering leadership course, we invite students to examine their paradigms about leadership and who they expect to practice leadership. This exploration is in keeping with an overall framework of the course: leadership and engineering share much in common, and therefore there is already a leader in every engineer. As workplaces continue to evolve from a centralized leadership model to one that is decentralized and agile, it becomes increasingly imperative that all members of an organization demonstrate leadership as appropriate to context. Furthermore, servant leadership is a significant characteristic of the prototypical engineering leader. These perspectives guide our treatment of networking. In practicing leadership with the heart of a servant, it is essential to have a robust network to efficiently connect people who can bring resources to a need. As emphasized before, robust networks are built on trust and reciprocity.

The perceived effects of course content and activities were beneficial considering the mean and mode scores in student evaluations. The content and activities we included in the course were consciously chosen to be simple and of low risk to students to encourage engagement through "easy wins." As with any new habit, we seek to lower the friction involved in undertaking the habit. Consistent with the objective of lowering friction, the presentation of content was made to be consistent with four elements of intrinsic motivation [18] that we cover in the module on motivation: 1) meaningfulness, 2) choice, 3) competence, and 4) progress. When a person finds intrinsic motivation in an activity, they are more likely to undertake it and have their heart in it; people eagerly engage in activities that they really want to do! Other specific suggestions for lowering friction include: 1) making use of social networks, especially LinkedIn, 2) network with early career professionals (because they are close in age), and 3) making use of weak connections (second and third order) in personal and operational networks.

## Recommendations for Faculty

It is worthwhile that many engineering faculty already stress the importance of networking. However, it can be helpful to also address and mentor students through addressing the common challenges and traps they encounter. Such mentoring need not be complicated or involved; it is quite beneficial to provide information and suggestions to students that hear and validate their experiences while also redirecting beliefs that can be holding them back. Here are several suggestions that may facilitate engineering faculty conversations with students.

- Affirm those students who experience anxiety over networking. Some anxiety may be social, some may be from lack of competence or skill and fear of failure. Such students are not alone; their emotions are valid and to be expected.
- It is worthwhile to validate ethical concerns students have about networking. Engineering disciplines uphold ethical standards, and we want our students to practice these as well. To calm such concerns, inform them that engineering practice depends on active networking. Their teams and organizations benefit from robust networks based on trust and reciprocity. Ethical concerns can diminish when one approaches networking with the attitude of a giver in developing authentic and lasting connections. Volunteering in organizations is a great way to be a giver, as is being creative about what one can give.
- Networking is about much more than finding a job. Participation in and leadership of engineering projects depend on robust networking–it is a real and important element of engineering work.
- Suggest that students approach networking as something that happens naturally while doing other things. Attending professional chapter functions of engineering societies and volunteering will readily connect students with people who can become valuable members of their network.
- Remind students that they already have networks, and that their "weak" contacts commonly hold the best prospect for valuable connections. Strategic use of LinkedIn or other professional social networking platforms provides a low friction means of making connections.
- Help students find intrinsic motivation in networking using the motivators identified above: meaningfulness, choice, competence, and progress. Intrinsic motivation pulls individuals naturally into work.

## Limitations and Future Work

In keeping with the initial exploratory nature of our work, the simple surveys we used understandably offer quite limited conclusions and insights. Nevertheless, because of this effort, we will solidify networking teachings and activities starting in the Spring 2023 semester. Notably, we will make stronger connections to servant leadership and provide more detailed guidance for developing skill in networking and specific ways in which one can practice it easily and at little risk. With the results of the surveys we have reported, we believe that simple improvements to the content delivered can result in the majority of students experiencing a positive shift in knowledge and attitudes about networking. Through future surveys, we plan to continue to improve the positive impact of the content. We furthermore plan to implement more detailed survey instruments.

## Summary and Conclusions

Strategic networking is a valuable and important skill for every professional, including engineers. In this paper we have explored perceptions of students about networking and how those perceptions changed by exposure to content and activities in an engineering leadership course. While students generally understand the importance of networking and feel modestly comfortable with it, many are unable to do it well because of anxiety, lack of skill, ethical concerns, and confusion over its purpose.

We administered two simple survey instruments before and after content and activities to gauge how perceptions may have changed. Based on this initial exploration, student perceptions and skills improved perceptibly. Accordingly, we will build upon this work going forward in subsequent semesters. Strategic networking is too important to the careers of engineers for them to struggle with emotions, concerns, purpose, and skills. There are a number of simple ways that engineering faculty can guide and mentor their students to become more comfortable with and proficient in networking.

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