



“Me Speak Marketer One Day”

Tips Engineers Can Use to Understand and Make Themselves Understood by Communicators

BRUCE MENDELSON

Engineers sure are clever. They conceive, design, implement and operate innovative products. They're proud of their precise measurements, the symmetry of their Venn diagrams, the deliverable timelines in their Gantt charts. They know that precision, symmetry, and delivering products on time and to spec are the hallmarks of effective engineers.

But... can they clearly explain all of this to non-engineers? Whereas engineers talk about product specifications, marketers, public relations folks, and communicators need to know about product features and benefits. Engineers who can clearly explain the features and benefits of their products will help marketers understand what makes their products unique.

Bruce Mendelsohn is Director of Communications and Outreach for the Bernard M. Gordon-MIT Engineering Leadership Program at the Massachusetts Institute of Technology.

As Ted Hissey—excerpted from “Enhanced Skills for Engineers”—says:

Corporate executives and managers identified several soft skills characteristics that they believe engineers need to maintain their value within an organization. These characteristics can be grouped into two categories: corporate necessities and personal attributes.

... Corporate necessities include having a global perspective; being a team player; and having sufficient professional depth and versatility to provide a multiplexing capability. . . Personal attributes, which are much more difficult to define and quantify, include dedication, persistence and assertiveness. (Hissey, 2000)

This article reveals some tips, tactics, and techniques about how engineers can become more effective communicators (or, to “speak marketer”).

Most engineers invest many years developing their technical expertise and comparatively little time mastering their communications skills. Our aspiring undergraduate engineering leaders in the Bernard M. Gordon-MIT Engineering Leadership Program regularly demonstrate technical and mathematical expertise, but they all need improvement in their communication skills. In our program (in addition to other interactive, hands-on activities), we help our Gordon Engineering Leaders (GELs) become more effective leaders by developing their listening, speaking and writing skills. In fact, visiting engineering industry leaders repeatedly tell us that today’s engineering executives want young engineers who can write clearly and concisely, who can deliver compelling oral presentations, and who can convey complex concepts in layman’s terms. In short, engineers who can communicate effectively across cultures in multi-disciplinary teams. Research supports this need: In *Communications Patterns of Engineers*, Tenopir and King estimate that engineers spend approximately 55% of their workday

communicating, most often with colleagues on the same project. (To arrive at this number, the authors extracted data from more than 30 surveys they conducted on the communications patterns of engineers and scientists between 1977 and 2003.)

In their analysis of those surveys, Tenopir and King evaluate the strengths and weaknesses of the ways engineers communicate. Engineers appear to be stronger in interpersonal communication and tend to fall off in writing skills. As a result, many engineering schools now require either additional writing courses or integrate writing skills into existing courses. Even the Accrediting Board for Engineering and Technology (ABET) has gotten involved, issuing guidelines to guarantee that engineering schools deal with this curriculum deficiency.

For purposes of this article, let’s agree that it’s impossible in one piece to cover all elements of effective communications. So we’ll focus on some general tips for effective communications based on Tenopir’s and King’s research regarding the routine emails and conversations engineers have every day. Here are a few general tips.

Pay attention to the cumulative effect of your communications

Unlike engineering, where precision makes the product, communications is far more than the precision and accuracy of your words. Indeed, the cumulative effect of your words, your body language, and your tone matters.

Your goal is to make sure the person with whom you’re communicating internalizes what you’re trying to say. To find out if someone with whom you’re speaking is internalizing what you’re saying, ask the simple question: “Can you explain what I’m asking/telling you?”

This simple active listening tool works to reinforce the internalization of the messages you’re trying to communicate and can help

reduce future miscommunications.

Note your verbal and nonverbal communications

What a person says isn't always as important as how they say it or their body language when they say it. Having made sure the person with whom you're communicating has internalized your communications; your next step is to listen to their response. In addition to listening to the tone of the person with whom you're speaking, note their body language: We continuously give and receive countless wordless signals in our interactions with others.

We send strong messages through our gestures, how fast or how loud we talk, how close we stand, and how much eye contact we make. The way you listen, look, move, and react tells others whether or not you care and how well you're listening. Nonverbal signals can either produce a sense of interest, trust, and desire to connect or generate disinterest, distrust, and confusion.

Choose your words carefully

Words matter, and every word elicits a different response in a particular listener. Many engineers assume the listener understands what they're saying because the words they've chosen are literally correct and precise. Other engineers don't pay as much attention to the words they use (this isn't the case at MIT, where precision prevails in engineering products and engineering communications).

To communicate your point effectively, try to understand your listener's model of what specific words mean and conform your communication to their perspective. The bottom line: When communicating, don't confuse precision with effectiveness.

Because we communicators know engineers *love* their charts

and tables, here’s one that translates key “Engineer-ese” terms into “Communications-ese”:

When an engineer says:	A communicator hears:
“Technical specifications”	Features and benefits
“Cost overruns”	Budget problems; delays bringing product to market
“Bandwidth”	You can’t do it, so you need me to
Any technical acronym	Usually nothing (that’s a joke, people!)

Consider your audience

When speaking with your fellow engineers, feel free to use the lingua franca of acronyms and jargon. But when speaking with non-engineers, target what you say to address your audience’s interests and goals. In most cases, technical terms don’t go over well when speaking with communicators.

To get the results you want, use words that will resonate among your audience. Remember that your results can depend how effectively you communicate. As Austin Weber (Managing Editor of *Control* magazine) says, “Verbal communication is the most effective way to move from ideas to action, and from action to results.”

Communicate timely

As we teach our GELs, a key factor in bringing a product to market on time, on budget, and to spec is discussing issues as they arise. Saying nothing is communicating. Silence generates misunderstandings: Speak up in a timely manner and you’ll help to reduce confusion. (After all, you do this already when a product specification isn’t met properly; apply the same rigor to your verbal communications.) Don’t avoid the difficult conversations. By proactively addressing difficult issues openly and candidly, you’ll become a more effective engineering communicator.

We all know that communication is fundamental to human interaction. But because engineers and technical professionals have unique ways of communicating that often rely on data and information, they may overlook or dismiss the so-called “soft skills” of human communication. These soft skills are critical factors necessary for the long-term success of any technical career.

As we teach our Gordon Engineering Leaders, it’s vital for tomorrow’s engineering leaders to develop themselves beyond the fundamentals of design, R&D or their chosen engineering discipline. Even a small, career-long commitment to honing their communications skills will help engineers understand the role the marketing process plays in bringing a product to consumers.

In some ways, their success depends on their communications savvy and their familiarity with the marketing process. As Ted Hissey emphasizes in IEEE USA’s “Today’s Engineer Online” (2002), technical expertise alone is not enough: “Academic and commercial organizations increasingly incorporate some aspects of the marketing process to secure new business contracts, research grants, or other types of project funding.”

[ELR

References & effective communications resources for engineers

- ASME. Communications skills. In *ASME Professional Practice Curriculum*. American Society of Mechanical Engineers, 2011. URL <http://php.aist.org/ela/vol10cs/index.html>.
- Steven T. Cerri. Effective communication skills for engineers. In *Proceedings of the 2000 IEEE Engineering Management Society*, pages 625–629, Albuquerque, New Mexico, USA, 2000. doi: 10.1109/EMS.2000.872578.
- Michael Z. Hackman and Craig Edward Johnson. *Leadership: A Communication Perspective*. Waveland Press, 5 edition, 2008. ISBN 1577665791.

- Ted W. Hissey. Enhanced skills for engineers. *Proceedings of the IEEE*, 88: 1367–1370, 2000.
- Ted W. Hissey. Enhanced Skills for Engineers (Pt. 2): Technical Expertise Alone Is Not Enough. *IEEE-USA Today's Engineer*, August 2002. <http://www.todaysengineer.org/2002/Aug/skills2.asp>.
- Carol E. Tenopir and David W. King. *Communications Patterns of Engineers*. IEEE Press, 2004. ISBN 047148492X.
- John Venables. *Communication Skills for Engineers and Scientists*. Institution of Chemical Engineers, 3 edition, 2002. ISBN 0852954557.
- John X. Wang. *What Every Engineer Should Know About Business Communication*. CRC Press, 2008. ISBN 084938396X.