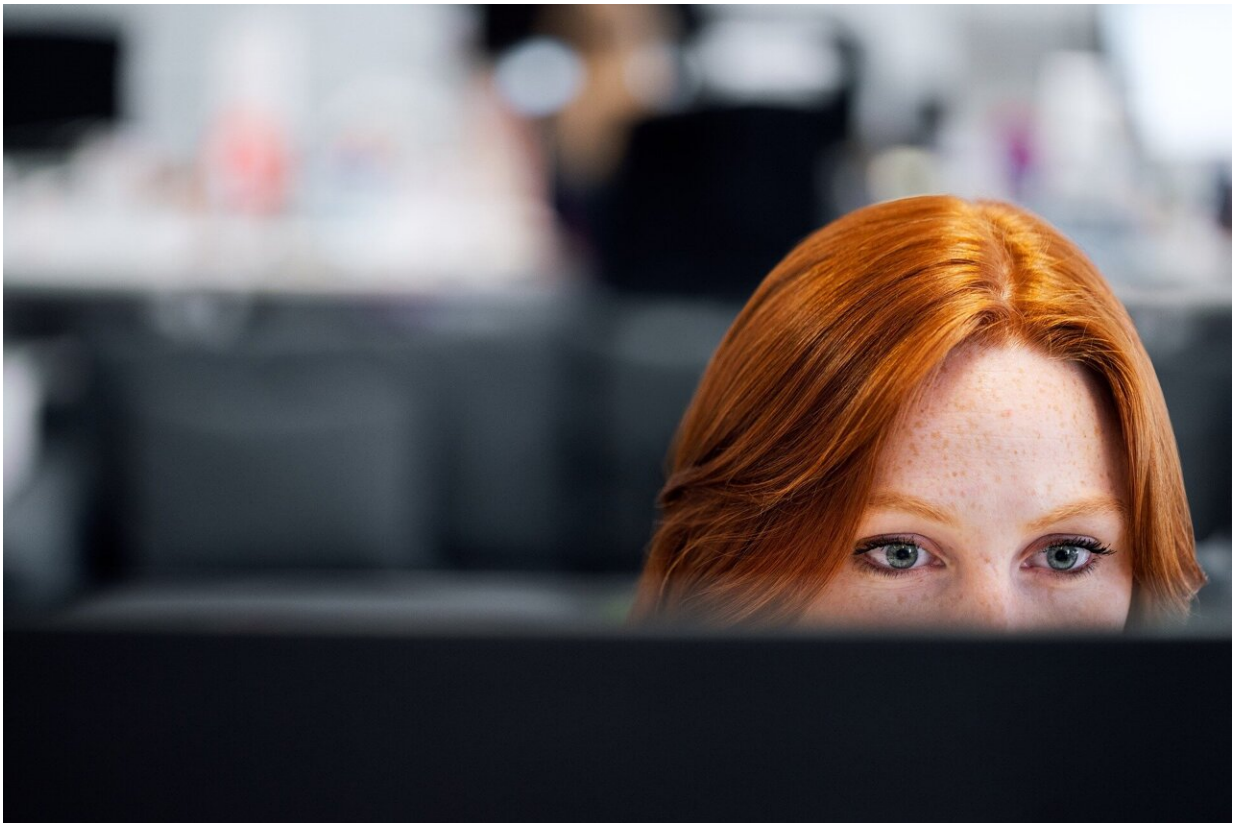


Communication strongly linked to productivity in a software organization

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A novel analysis of 3 years of conversations at a software engineering organization suggests a strong relationship between communication and productivity. Arindam Dutta of Arizona State University, U.S., and

colleagues present these findings in the open-access journal *PLOS ONE* on July 14, 2021.

According to widespread belief, [communication](#) within an organization contributes to [productivity](#). However, most research into this relationship has relied on indirect measurements of communication, rather than direct observations—which are far more challenging to capture and analyze. Therefore, strong evidence of a link between communication and productivity has been lacking.

To help clarify this link, Dutta and colleagues developed a rigorous method for capturing and analyzing direct observations of communication within an organization. Their approach applies network and speech analysis strategies to [audio recordings](#) of conversations between employees, illuminating when different employees talk to each other as well as speech characteristics that could indicate each speaker's emotional state. This communication data is then analyzed in relation to [employee](#) productivity, measured according to the number of lines of computer code written in a given time.

To demonstrate this novel method, the researchers used it to analyze communication and productivity of 79 employees of a software engineering organization who volunteered to have their speech recorded at work over 3 years. The analysis showed that communication was indeed strongly linked to productivity, and that, by analyzing the audio recordings, the researchers could predict productivity with a mean absolute error of below 10 percent.

The researchers note that certain aspects of communication were linked more strongly to productivity than others. Specifically, characteristics of the communication network (including, for instance, who speaks with whom or how often employees interact) appear to be more important than characteristics of the [speech](#) itself.

While this study suggests a relationship between communication and productivity, it doesn't clarify whether communication causes changes in productivity or if productivity changes the communication network. Nonetheless, the novel method to analyze audio recordings could enable deeper, more rigorous research on communication within a group or organization.

More information: Dutta A, Steiner E, Proulx J, Berisha V, Bliss DW, Poole S, et al. (2021) Analyzing the relationship between productivity and human communication in an organizational setting. *PLoS ONE* 16(7): e0250301. doi.org/10.1371/journal.pone.0250301

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