
How can machine learning evaluate corporate culture?

Feng Mai



How much can be deduced about a company's future from the way it talks about itself? Quite a lot, according to information

systems assistant professor Feng Mai, who has developed a semi-supervised machine learning approach to measuring culture from corporate disclosures.

Conducting one of the first studies of its kind, Mai applied word-embedding modeling to Q&A sections of more than 200,000 earnings call transcripts over a seven-year period. This deep learning approach employs an artificial neural network to parse context, quantifying both the syntax and semantics of linguistic expressions. Using seed words to represent each of five cultural values, the resulting dictionary is used to score for innovation, integrity, quality, respect and teamwork.

With findings forthcoming in *The Review of Financial Studies*, Mai and his team from the Stevens School of Business demonstrate how stronger corporate cultures correlate with better long-term business outcomes and greater resilience during crises. In a subsequent working paper, Mai shows that, during the COVID-19 pandemic, companies with stronger cultures were more likely than their peers to support their local communities, pivot to digital technology and develop new products without aggressively cutting costs.

Mai's findings may help inform investor and employee decision-making, and the system can be adapted for use in other sectors. — *Kellie Walsh*
