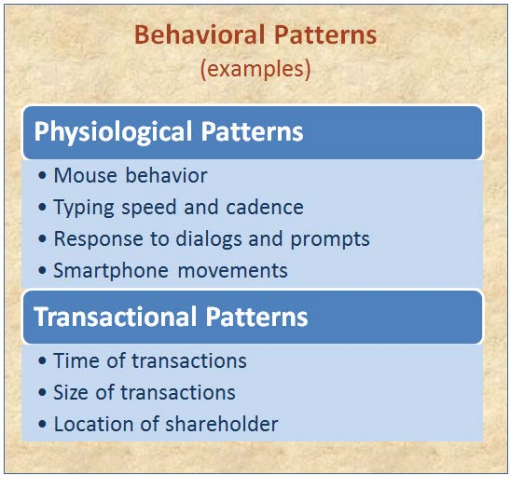
The text below is an excerpt from the ICI Mutual risk management study *Shareholder Authentication: Managing the Risk of Fraudulent Transactions.* The full study may be accessed at www.icimutual.com/ShareholderAuthentication.

Behavioral Patterns

Understanding how a given user behaves (or what a given user does)—such as patterns of behavior with respect to logging in, navigating the website, or engaging in transactions—can be helpful in confirming the user's identity. At least one fund group consulted for this study uses a third-party authentication service, which analyzes a variety of details with respect to an online transaction and provides a "score" indicating the probability that the person logging in is the shareholder in question. Among other things, this service analyzes the user's login times, the user's location when he or she logs in, and details about the user's computer or mobile device. If, for example, the login time appears to be anomalous for that particular shareholder, the "score" may be affected and may prompt follow-up questions (e.g., knowledge-based authentication questions) to confirm the shareholder's identity.



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