Humans vs. automation: Service center agents can outperform technology, study shows

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In the digital age, service center operations, including call centers and help desks, are increasingly important as main channels for organizations

to interact with their customers. Companies are looking for ways to manage service centers more efficiently—including routing calls to appropriate representatives—because service centers have a direct impact on customer satisfaction and firm performance.

"A behavioral perspective on service center routing: The role of inertia" is forthcoming in the Journal of Operations Management from Nicholas Berente, the Viola D. Hank Associate Professor, and Kaitlin Wowak, associate professor of information technology, analytics and operations at Notre Dame's Mendoza College of Business. The research centers on the concept of behavioral inertia, which refers to a tendency to stick with the status quo. Because of their cognitive biases and social relationships, service center agents route calls the way they've always done in the past.

"In general, this inertia costs time and money compared with the optimization you can get with automation," said Berente, a former entrepreneur who studies how digital innovation drives large-scale organizational change. "However, there are certain situations where inertia actually improves service center operations. When agents are experts, or when they are handling particularly complex, difficult calls, these inertial behaviors are beneficial in terms of efficiency and effectiveness."

Ideally, organizations want to route calls to the right place without requiring excessive time, attention and money. This leads to widespread automation.

"Often the automation is awful, so you can never replace humans entirely," Berente said. "Instead, we end up with combinations of humans and automation. It is critical to understand when one outperforms the other. This is particularly important now, since artificial intelligence technologies are increasingly being used in service centers. Services will inevitably involve humans working in conjunction with

technologies, and it is critical to understand when the technology provides benefits and when the human does."

Firms generally try to optimize routing in their call centers based on a couple of major assumptions. First, they work under the premise that call center agents will follow the guidance of systems they implement. Second, they generally assume that prescribed routing schemes will be optimal in terms of efficiency and effectiveness over human routing.

"We find humans do not always follow the guidance as expected—as indicated by their behavioral inertia," Berente said. "And we find this inertia can be good when the agents are experts or when they are dealing with really difficult issues."

"For example, a service center's routing protocol may indicate that Agent A should route an issue to Agent B based on various factors such as length of queue or general expertise," Wowak explained. "However, based on cognitive biases and social embeddedness, Agent A may route the issue to Agent C. While such routing discretion can hinder overall service center performance, we discovered that it is beneficial when the issue is particularly difficult and/or the agent has high expertise."

The team analyzed call routing from 79,994 calls to a service center of a North American technology company that employs more than 180 agents. They also conducted interviews and an onsite visit.

The paper suggests, "By bringing to light the presence of a significant behavioral inertia effect, service center supervisors can implement policies to maximize the benefits of inertia, while also limiting its effect overall. This requires striking a balance between highly directive automated routing systems and allowing for agent discretion."

"The takeaway for companies is that human discretion is good in certain

situations, but not all situations," Wowak said. "As such, companies should establish routing protocols that afford agents a certain amount of discretion when making routing decisions, but too much discretion is suboptimal."

The team also recommends a greater focus on training service center agents about inertia in the routing process as well as its causes and consequences and encouraging interaction among agents to help to avoid some of the socially embedded causes of inertia.

Co-authors of the study include Aaron Schecter from the University of Georgia and Han Ye and Ujjal Mukherjee from the University of Illinois at Urbana-Champaign.

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