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TOMORROW'S CHALLENGES

WHY YOUR I.T. PROJECT NEEDS A COGNITIVE SCIENTIST

UNDERSTANDING HOW PEOPLE PERCEIVE PROBLEMS, USE INFORMATION AND ANALYZE DATA

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Our research, which has involved studying more than 50 international organizations in a variety of industries, has identified an alternative approach to big data and analytics projects that allows companies to continually exploit data in new ways. Instead of the deployment of technology, it focuses on the exploration of information. And rather than viewing information as a resource that resides in databases — which works well for designing and implementing conventional IT systems — it sees information as something that people themselves make valuable.

Accordingly, it's crucial to understand how people create and use information. This means that project teams need members well versed in the cognitive and behavioral sciences.

Most IT professionals have engineering, computer science, and math backgrounds. Not surprisingly, they are generally very logical and are strong process thinkers, and they tend to focus less on the "I" and more on the "T" in IT. For tasks such as processing financial trades or retail transactions, these are ideal skills. If, however, the goal is to support the discovery of knowledge, they become a hindrance.

To address this problem, many companies have added people with deep knowledge of the business to IT project teams, exposed IT professionals to complex business issues, and hired more data scientists. But those moves will not be enough. When working with big data sets, you can probably find statistically meaningful relationships between any variables you choose. What pulls you back to reality is knowledge of the business. The dilemma is that this knowledge can also limit your sphere of thinking.

For that reason, big data and other analytics projects require people versed in the cognitive and behavioral sciences, who understand how people perceive problems, use information, and analyze data in developing solutions, ideas, and knowledge. This shift mirrors the shift in economics to behavioral economics, which applies knowledge from the fields of social psychology and the cognitive and behavioral sciences to develop a new understanding of how people think and behave in markets and economies.

In some organizations today, big data and analytics projects already include people with backgrounds in those fields. Her Majesty's Revenue and Customs (HMRC), the British tax agency, has recently employed organizational psychologists, who help analytics teams improve their interpretive abilities by, for example, making them aware of their confirmatory biases: their tendencies to search for or interpret information in a way that confirms preconceptions. One such bias was that certain debt-collection approaches worked for particular categories of taxpayers.

HMRC's leaders recognize that in addition to knowing how the business works — for example, what kind of case can go to court, what that process entails, and why certain cases fail — data scientists also need to understand the mind-sets of debt collectors and the behaviors of debtors (for example, why some people who owe taxes pay before a case gets to court and others don't). The organizational psychologists assist in this. They also spend time in the field with inspectors (who conduct tax investigations) and call-center staffers (who negotiate with taxpayers).

Organizations that want employees to be more data oriented in their thinking and decision making must train them to know when to draw on data and how to frame questions, build hypotheses, conduct experiments, and interpret results.

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