

THE METADATA ENIGMA

Metadata, the layer of data abstraction, is among the more enigmatic elements in information systems. Enigmatic, since IT professionals have vague and sometimes conflicting views of its role and value. While system administrators contend that no system can function robustly without metadata, business decision makers often fail to see its value and consequently find it difficult to justify metadata-related expenditures [5, 8]. Meanwhile, academic researchers have not examined metadata in depth, and consequently theoretical frameworks for assessing the value of metadata do not exist.

In the past, before commercial database management systems were widely adopted by organizations, metadata was a second-class citizen in the data management field [7]. Application and system developers who sought to implement metadata solutions con-

sidered it a Sisyphean¹ torture. Metadata requirements are complex and difficult to capture, implementation is demanding, the end result is rarely satisfactory, and enhancements or corrections require significant effort, as metadata layers are deeply embedded in systems. Why is implementing metadata solutions so difficult? Here, we explore this question in the context of a data warehouse, introducing the multiple elements that constitute metadata to illustrate its inherent complexity. We further explore the drawbacks of commercial off-the-shelf (COTS) products for managing metadata and the challenge of designing and implementing metadata solutions. Finally, we ask whether the difficulties

¹In Greek mythology, Sisyphus, the king of Corinth, was condemned to eternal torture by the gods. His punishment was to roll a heavy stone up to the top of a steep hill, and, whenever he would almost reach the top, the stone would roll down to the bottom of the hill, forcing him to start again.

Metadata promises too much value as a business management tool to dismiss its implementation and maintenance effort as the equivalent of Sisyphean torture.

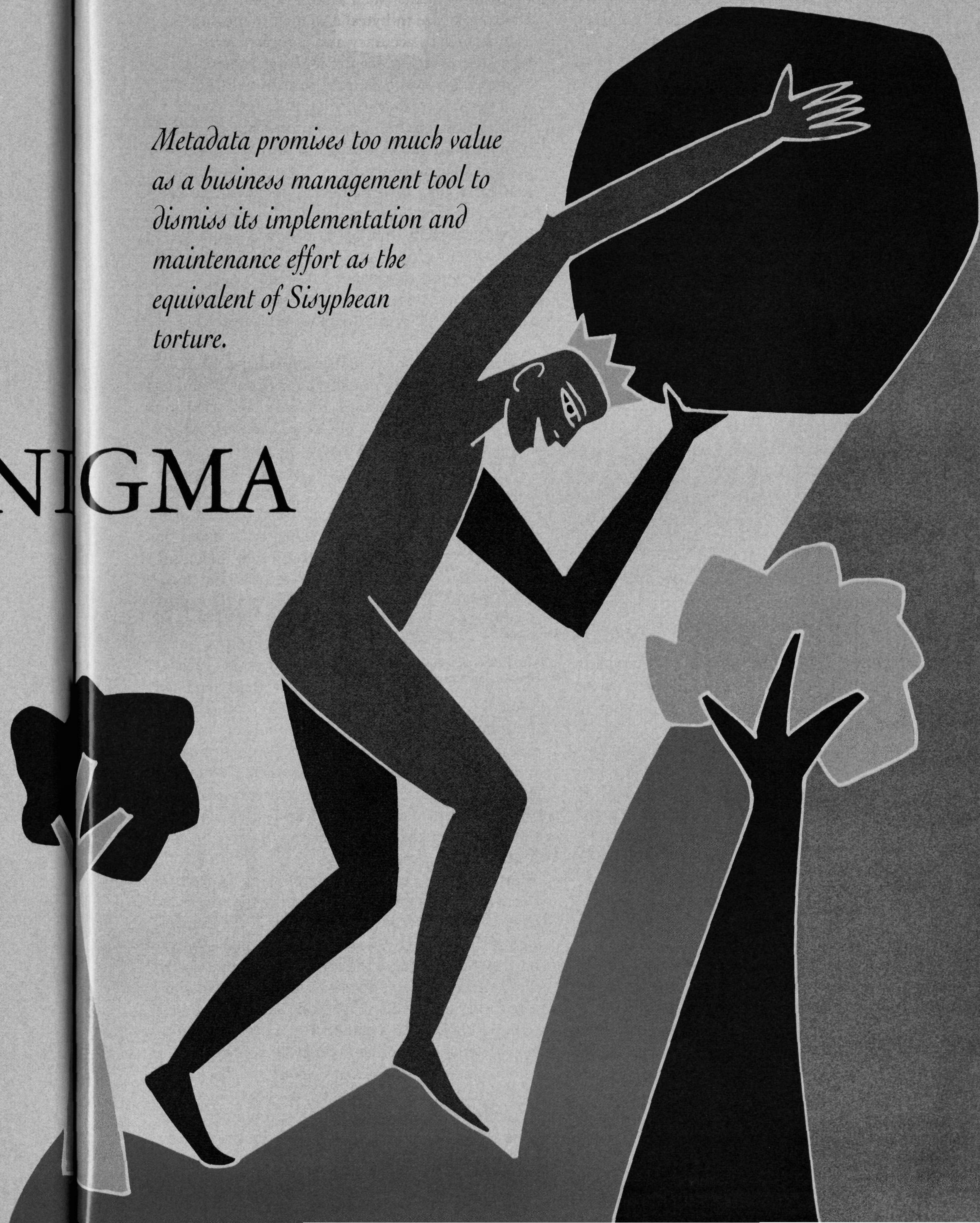


Illustration by Oreste Zevola