

the company takes the digitized data and indexes them with a software program that allows someone to search for specific content instead of manually paging through hundreds of screens, it is practicing Knowledge Management.

Given the range of business activities that can be considered examples of Knowledge Management, one of the most confusing aspects of the practice is clarifying exactly what constitutes knowledge, information, and data. Although the academic community has spent decades debating the issue, for our purposes, these definitions and concepts apply:

- *Data* are numbers. They are numerical quantities or other attributes derived from observation, experiment, or calculation.
- *Information* is data in context. Information is a collection of data and associated explanations, interpretations, and other textual material concerning a particular object, event, or process.
- *Metadata* is data about information. Metadata includes descriptive summaries and high-level categorization of data and information. That is, metadata is information about the context in which information is used.
- *Knowledge* is information that is organized, synthesized, or summarized to enhance comprehension, awareness, or understanding. That is, knowledge is a combination of metadata and an awareness of the context in which the metadata can be applied successfully.
- *Instrumental understanding* is the clear and complete idea of the nature, significance, or explanation of something. It is a personal, internal power to render experience intelligible by relating specific knowledge to broad concepts.

As shown in Exhibit 1.2, the concepts defining knowledge are related hierarchically, with data at the bottom of the hierarchy and under-