improved through education. However, management has to decide if an investment in education will increase the value multiplier associated with a given knowledge worker sufficiently to warrant that investment.

Part of the challenge in making this determination is that typically there are several unknowns in establishing the ROI of educating knowledge workers. These uncertainties include:

- *Individual differences*. Knowledge workers differ in preferred styles of learning, cognitive abilities, aptitude for certain tasks, drive, and motivation. As a result, some will respond well to the educational experience while others may not benefit.
- *Finite shelf life of knowledge.* In a knowledge organization, procedures and best practices can change in a matter of months, compared to years in a traditional manufacturing company. In a large corporation, by the time a knowledge worker is trained in new skills, a new industry standard could devalue the skill set. For example, in a large news publication organization, reporters originally trained in traditional photographic techniques may need to be educated on digital camera techniques, including how to transfer images over the Internet to corporate headquarters. Reporters who don't receive such education represent a value loss to the company because other news-gathering agencies will respond faster and win assignments.
- *Lost opportunity costs.* The time knowledge workers spend away from work attending seminars and classes, the cost of flights and other transportation, and the cost of on-site instructors and courseware could be invested elsewhere in the company.
- *Knowledge worker turnover.* If knowledge workers are downsized or leave on their own accord, they take intellectual assets with them. The amount of intellectual capital that leaves the company when a knowledge worker departs is inversely pro-