APPLYING LEAN CONCEPTS to eliminate waste, improve efficiency and lower production costs has become popular among senior-level management. Minimizing waste is the base on which lean concepts are built. A lean endeavor seeks to eliminate activities or processes that consume resources, add cost or require unproductive time without creating value. The concepts can be described as striving for excellence in operations in which each employee seeks to eliminate waste and participates in the smooth flow of value to the customer. For safety professionals, lean represents an opportunity to make substantial contributions to the business process. When a lean initiative is proposed, safety professionals should tactfully and assertively call management's attention to an element of waste that should be addressed in the lean process—waste arising from the direct and ancillary costs of accidents. For example, a safety director whose staff had convinced management through its accomplishments that they add value to the business process asked to be a part of the concept discussions as soon as he heard that lean concepts were being considered. He says management quickly recognized that his counsel would be valuable in eliminating the waste which derives from accidents. (Another example of how SH&E staff was extensively involved in a lean design activity begins on p. 31.) Direct accident costs are substantial—those costs are a form of waste. Ancillary costs, such as those related to interruption of work, facility and equipment repair, idle time of workers, training of replacements, and investigation and report preparation, may represent a greater amount of waste than direct costs. For incidents that result in severe injury—particularly when property damage is extensive—the ancillary cost and accompanying waste can be substantial.

Addressing Hazards & Risks Early in the Lean Process Since the goal is to minimize waste and reduce costs, it is logical to address safety considerations early in the lean process rather than as an afterthought. Unfortunately, many attempts at achieving lean have not included—or worse, have compromised—safety considerations. As a result, hazards and risks are increased. The author has observed situations similar to those about which Newman and Braun (2005) offer caution with respect to poorly designed tasks that do not adequately consider human limitations. Unfortunately, lean doesn't necessarily mean safer though the two should go hand in hand. After all, a poorly designed task that requires a worker to reach excessively is not only inefficient, requiring more time and motion than needed, but is also likely to cause injury. Similarly, a worker lifting materials beyond his or her own capabilities takes more time and energy to perform the task and runs the risk of overexertion. In the worst-case scenario, an overzealous company may implement extreme lean manufacturing strategies where safety is not merely overlooked, but compromised. In the end, increasing efficiency without incorporating safety will cost far more than it saves. Minimizing handling and storing of materials and work in process, and avoiding interruptions in the workflow are central in the lean process.
Looking for more?
Some of the OnePetro partner societies have developed subject-specific wikis that may help.

PetroWiki was initially created from the seven volume Petroleum Engineering Handbook (PEH) published by the Society of Petroleum Engineers (SPE).
The SEG Wiki is a useful collection of information for working geophysicists, educators, and students in the field of geophysics. The initial content has been derived from: Robert E. Sheriff's Encyclopedic Dictionary of Applied Geophysics, fourth edition.

Retrofitting for Safety: Career Implications for SH&E Personnel. W.C. Christensen. PDF

Today, “lean” may no longer be fashionable but its core principles (flow, value, pull, minimizing waste etc.) have become the paradigm for many manufacturing (and service) operations. Given this pre-eminence, the paper seeks to establish what impact it has had on the overall competitive positions of adopter firms.