Knowledge discovery in science and engineering has been driven by theory, experiments and more recently by large-scale simulations using high-performance computers. Modern experiments and simulations involving satellites, telescopes, high-throughput instruments, imaging devices, sensor networks, accelerators, and supercomputers yield massive amounts of data. At the same time, the world of business, traditional and online, as well as social communities are creating massive amounts of data at an astonishing pace. Thus high-performance data analytics and mining has become essential for knowledge discovery in science and engineering, as well as a business intelligence mechanism for operational success and sustainable competitive advantage in business.