TABLE 1.1 Some applications of operations research

Organization	Nature of Application	Year of Publication*	Related Chapters†	Annual Savings
The Netherlands Rijkswaterstaat	Develop national water management policy, including mix of new facilities, operating procedures, and pricing.	1985	2–8, 13, 22	$15 million
Monsanto Corp.	Optimize production operations in chemical plants to meet production targets with minimum cost.	1985	2, 12	$2 million
United Airlines	Schedule shift work at reservation offices and airports to meet customer needs with minimum cost.	1986	2–9, 12, 17, 18, 20	$6 million
Citgo Petroleum Corp.	Optimize refinery operations and the supply, distribution, and marketing of products.	1987	2–9, 20	$70 million
San Francisco Police Department	Optimally schedule and deploy police patrol officers with a computerized system.	1989	2–4, 12, 20	$11 million
Texaco, Inc.	Optimally blend available ingredients into gasoline products to meet quality and sales requirements.	1989	2, 13	$30 million
IBM	Integrate a national network of spare parts inventories to improve service support.	1990	2, 19, 22	$20 million +$250 million less inventory
Yellow Freight System, Inc.	Optimize the design of a national trucking network and the routing of shipments.	1992	2, 9, 13, 20, 22	$17.3 million
New Haven Health Department	Design an effective needle exchange program to combat the spread of HIV/AIDS.	1993	2	33% less HIV/AIDS
AT&T	Develop a PC-based system to guide business customers in designing their call centers.	1993	17, 18, 22	$750 million
Delta Airlines	Maximize the profit from assigning airplane types to over 2500 domestic flights.	1994	12	$100 million
Digital Equipment Corp.	Restructure the global supply chain of suppliers, plants, distribution centers, potential sites, and market areas.	1995	12	$800 million
China	Optimally select and schedule massive projects for meeting the country's future energy needs.	1995	12	$425 million
South African defense force	Optimally redesign the size and shape of the defense force and its weapons systems.	1997	12	$1.1 billion
Proctor and Gamble	Redesign the North American production and distribution system to reduce costs and improve speed to market.	1997	8	$200 million
Taco Bell	Optimally schedule employees to provide desired customer service at a minimum cost.	1998	12, 20, 22	$13 million
Hewlett-Packard	Redesign the sizes and locations of buffers in a printer production line to meet production goals.	1998	17, 18	$280 million more revenue

*Pertains to a January–February issue of *Interfaces* in which a complete article can be found describing the application.
†Refers to chapters in this book that describe the kinds of OR techniques used in the application.