2. Describe how Traynor could have applied Lewin's three-stage model of change in implementing the ECM. What would have been the advantages of applying Lewin's three-stage model?
3. Assess Southern's ECM system on the four dimensions of project success. How successful do you think this project is?

Sources: Southern Company Web site, www.southerncompany.com (accessed April 18, 2012); S. Overby, "How Southern Company Revamped IT Change Management," Ci- com (October 18, 2010), http://www.cio.com/article/2414206/it-organization/how-southern-company-revamped-it-change-managemer- ml (accessed September 2, 2015).

CASE STUDY 11-2 Dealing with Traffic Jams in London

As London entered the 21st century, it confronted a major issue that plagues many cities throughout the world—excessive automobile traffic. Many Londoners—particularly the business community—rated traffic congestion as the city's most serious problem. At peak periods, the average speed was less than 10 miles per hour, a slower speed than the horse-drawn carriages of previous centuries. Drivers spent about half their time waiting in traffic. This congestion nightmare was not only a major source of driver frustration but also a contributor to both environmental and economic problems. By one estimate, traffic-related problems cost London businesses roughly £2 million—more than $3 million—every week. Clearly, the city needed an aggressive policy to address this issue. The solution, proposed by the government study *Road Charging Options for London* (ROCOL) authorized by the 1999 Greater London Authority Act and endorsed by incoming mayor Ken Livingstone, was *congestion charging*. As the name suggests, the city would assess a fee, or charge, on every automobile that entered high-traffic sections of London during peak hours.

Rather than attempt a broad citywide implementation, the government focused specifically on the highly congested section of central London where roughly 1 million people entered every day, about 150,000 of them by private automobile. Beginning in February 2003, drivers who entered this area between 7 A.M. and 6:30 P.M. had to pay a fee of £5 (roughly $8) by midnight. The fee has steadily increased over the years, and by 2014 it had increased to £11.50 (roughly $18).[56] Certain types of vehicles, such as ambulances, buses, and taxis, are exempt. Drivers have the option to pay the charge by mail (prepay), text messaging, telephone, or in person at various pay points. Failure to pay the fee results in a fine of £130 (roughly $200).[57] Significantly, this solution makes extensive use of current technologies. From the start, the city installed almost 700 cameras at more than 200 sites in the designated high-traffic area to photograph the license plates of every vehicle that entered the area. The city transmitted these photos to a data center that translated the photographic images into license plate numbers utilizing automatic number plate recognition technology. Drivers who failed to pay the fee received a notice of the fine in the mail.

To create and implement the congestion charge plan, the government had a number of project risks:

- *Tight schedule:* The project needed to be completed under tight deadlines in order to meet multiple statutory requirements and minimize disruptions to commuters.
- *Technology:* The cameras had to be strategically placed in order to accurately photograph tens of thousands of license plates every day.
- *Lack of pre-existing models:* There were no pre-existing models in the world to follow.
- *Limited experience and expertise:* Livingstone had been recently elected mayor, and the supervising governmental agency—Transport for London—had only recently been created. Thus, neither was experienced in building such a system.
- *Political fallout:* The political risk of a system failure to Livingstone was so huge that it would be extremely damaging to his career.

Transport for London adopted a series of management strategies to navigate these waters and limit the risks resulting from its limited experience, IT ability, and management time. Perhaps the most significant decision was to outsource the basic management activities to firms that specialized in these areas. For example, PricewaterhouseCoopers first and then Deloitte & Touche were contracted to manage the competitive bidding process.

Early in the project, project managers identified the critical technical elements and divided the project into five "packages" that could, if required, be bought and managed separately. These included (1) the camera component, (2) the so-called image store (storage) component that collected images, converted them into license numbers, and condensed the images (duplicates would occur when one vehicle was photographed by several cameras), (3) the telecommunications links between the cameras and the image store component, (4) the customer services infrastructure, including the ability to pay by phone, Web, and mail, and (5) an extensive network of retail outlet kiosks and gas stations where people could pay the toll.

The retail (driver's) side of the system was seen as such a big risk that it was bought and managed separately. To further reduce the risks, it was decided to select the best available technologies for each of the five packages. Another risk-aversive move was to utilize only established technologies for the actual process of identifying the vehicles in the designated zone. For example, Transport for London rejected proposals to employ electronic tags because this technology had not been proved effective in scenarios such as this one. Finally, the city added roughly 200 buses to its fleet to accommodate increased ridership.

Transport for London requested bids on the project early in 2001. The estimated $116.2 million project was large enough to require listing in the European Union's public sector register. Companies throughout Europe were allowed to bid on it. Separate bids could be tendered for the camera and communications packages whereas the remaining three packages could receive bids on a combined basis or individually. Deloitte & Touche reviewed more than 40 bids before deciding on a single contractor to manage the entire program. Its choice was The Capita Group, England's largest business process outsourcing firm. Significantly, before accepting Capita's bid, Deloitte & Touche required both that firm and the other final candidate to submit technical design studies. In addition, Capita's contract included penalties if the company failed to meet the established deadlines.

[56] Transport for London, https://tfl.gov.uk/modes/driving/congestion-charge (accessed September 2, 2015); BBC News, "London's Congestion Charge Rises to £11.50" (June 16, 2014), http://www.bbc.com/news/uk-england-london-27865252 (accessed September 2, 2015).

After awarding the contract to Capita, Deloitte & Touche closely monitored every step of the process, and it kept additions to the original plan to a minimum. As a result, scope creep—the process whereby a project increases in both size and costs as new features are added—was never a serious issue. One of the few changes added to the requirements was an option for motorists to pay fees through the popular SMS text-messaging format.

Throughout the implementation of the new system, the city continually sought feedback from key stakeholders. In addition, it regularly updated the public concerning the project's status. Consequently, few drivers were caught unaware when the new policy went into effect on February 17, 2003. The mayor also wisely decided to begin operations during a school holiday period when traffic volumes would be significantly lower. Thus, by the time traffic returned to normal, drivers generally had adapted to the new procedures.

What were the results of these concerted efforts? Unlike so many systems projects, London's congestion charging plan was completed on time and within budget. Significantly, however, the demanding schedule did not compromise the quality of the work. Instead, five months after it was begun, the new program appeared to have achieved its basic goals when a follow-up study[58] indicated that traffic in central London had diminished by as much as 20%, and average driving speeds had improved. A 10-year study found sustained reductions in central London, averaging 23% over the longer period.[59] The fines and fees resulted in a project payback period of about one and one-half years. It was estimated that total revenues would amount to $2.2 billion over a 10-year period. Moreover, vehicular emissions of toxic substances such as nitrogen dioxide were also reduced. However, a study found it difficult to determine the precise causes of London's decreased emissions between 2003 and 2011.[60] Because half of the European Union's automobiles have diesel engines, nitrogen dioxide levels might have fallen further if Volkswagens had proper emission controls.[61]

One potential problem that did *not* emerge was "rat runs" in which traffic jams would appear in areas outside the zone as drivers altered their routes to avoid the charges. After reviewing the outcomes of the London program, many observers predicted that congestion charging would become a standard practice in cities throughout the world.

Discussion Questions

1. Assess the risks of this project. Given your assessment of the project complexity, clarity, and size, what management strategies would you recommend for it? What, if any, of these strategies were adopted in this project?
2. Describe the development methodology that was applied to this project. Was this the most appropriate approach? Provide a rationale for your response.
3. When a project is outsourced, who should manage the project—the internal group or the outsourcer? Why?

Sources: Ken Livingstone, "The Challenge of Driving through Change: Introducing Congestion Charging in Central London," *Planning Theory and Practice* 5, no. 4 (December 2004), 490–98; Bradford Wernie, Wim Oude Weernink, and Sylviane de Saint-Seine, "The World Watches As London Tries to End Congestion," *Automotive News Europe* 8, no. 2 (January 27, 2003) 3–4; Malcolm Wheatley, "How IT Fixed London's Traffic Woes," *CIO*16, no. 19 (July 15, 2003), http://www.cio.com/article/2439968/it-organization/how-technology-fixed-london-s-traffic-woes.html (accessed September 3, 2015); "Transport for London Study: Public and Stakeholder Consultation on a Variation Order to Modify the Congestion Charging Scheme: Impact Assessment" (January 2014), https://consultations.tfl.gov.uk/roads/cc-changes-march-2014/user_uploads/cc-impact-assessment.pdf (accessed September 3, 2015).

[58] Malcolm Wheatley, "How IT Fixed London's Traffic Woes," CIO16, no. 19 (July 15, 2003), http://www.cio.com/article/2439968/it-organization/how-technology-fixed-london-s-traffic-woes.html (accessed September 3, 2015).

[59] "Transport for London Study: Public and Stakeholder Consultation on a Variation Order to Modify the Congestion Charging Scheme: Impact Assessment" (January 2014), https://consultations.tfl.gov.uk/roads/cc-changes-march-2014/user_uploads/cc-impact-assessment.pdf (accessed September 3, 2015).

[60] Green Car Congress, "HEI Study Finds London Congestion Charging Scheme shows Little Evidence of Improving Air Quality" (April 27, 2011), http://www.greencarcongress.com/2011/04/hei-study-finds-london-congestion-charging-scheme-shows-little-evidence-of-improving-air-quality.html#tp (accessed September 3, 2015).

[61] Karl Mathieson and Arthur Neslen, "VW scandal caused nearly 1m tonnes of extra pollution, analysis shows," *The Guardian* (September 23, 2015), http://www.theguardian.com/business/2015/sep/22/vw-scandal-caused-nearly-1m-tonnes-of-extra-pollution-analysis-shows (accessed September 26, 2015).