TB5950

CASE STUDY 11-2

DEALING WITH TRAFFIC JAMS IN LONDON

It's hard to think of traffic in any big city as being good. But London's traffic at the turn of the millennium may have been far worse than that of the average metropolis. When driving in London's downtown area, drivers spent around half their time waiting in traffic, incurring 2.3 minutes of delay for every kilometer they traveled. To get its horrendous traffic jams under control, the city government decided to marry information technology with 699 cameras at 203 sites in the 8 square miles targeted for congestion control. Rather than wait in lines to pay a toll, drivers now pay for a daily toll when they drive their cars in the areas marked by a red C logo painted on signs and streets. To verify their being in toll areas, the cameras daily take over a quarter of a million pictures of the license plates of cars in designated areas. Motorists who don't pay the toll that day are automatically fined about $130. The fines and tolls resulted in a project payback period of about one and a half years. In ten years this will translate into total revenues of $2.2 billion—all of which will be used to improve London's public transportation systems. Further, as of March 2003, traffic in the city's center had fallen by an unexpectedly high 20%, improving journey times by 5% and saving drivers 2 million to 3 million hours of frustration every year.

The project risks were obvious from the outset. The project faced a tight implementation timetable, there was no preexisting model anywhere in the world to follow, and a brand-new transit authority working under a brand-new mayor faced the challenge of integrating new technologies. The narrow, convoluted streets that were hundreds of years old did not lend themselves to collecting tolls. Cameras needed to be situated carefully to achieve sufficiently high levels of number recognition accuracy. For the new mayor, the political risk was huge, as failure of the system would be extremely damaging to his career.

The department implementing the system, Transport for London, recognized its own limitations in terms of experience, IT ability, and management time. Consequently, Transport for London decided to outsource critical elements of the project management first to consultants from PricewaterhouseCooper and then Deloitte & Touche.

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 image store 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.

Even at this early stage, risk aversion played a role. Instead of combining the customer services infrastructure and the retail side into a single customer-facing operation, retail was seen as a big enough challenge to be bought and managed separately. To reduce the risks, the technologies selected for each of the five packages were the best available.

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, and tenders were open to companies throughout Europe. Separate bids could be tendered for the camera and communications packages, whereas the remaining three could receive bids on a combined basis or individually. The bid process was managed by Deloitte

& Touche, who narrowed the original 40 bids to 4. Then two of these bidders undertook a three-month technical design study to focus on issues such as data throughput, how the retail channels would work, how to achieve the best number recognition performance, and what payments might be expected through each payment channel. Although both bidders were paid for their technical design, it was decided that the benefits of contracting the two analyses for improving overall project quality would outweigh the cost of paying the losing bidder. The Capita Group, the winning bidder, gained confidence through the process that their technical design, especially for the challenging image store component, was viable.

From the technical point of view, the greatest challenge was the creation and management of the image store. This component had to process a million records each day (picture those 250,000 vehicles moving about the city center all day)—as well as store them for evidentiary purposes for the subsequent prosecution of nonpayers. Meeting the challenge meant carefully evaluating design considerations (such as using the most reliable technology available) and writing software code that would automatically detect which image of a passing vehicle would yield the most accurate number recognition. Simon Pilling, executive director at Capita, who was in charge of the project, stated: "The deadlines were very tight and were politically driven, and it highlighted where the risks were." Capita's contract included clear milestones and damages against the contractor for failure to deliver on time. Deloitte was hired to rigorously monitor Capita's progress in completing the estimated 300 years of effort that would be required to complete the project in the space of a year. The targeted deadline for completion was February 17, 2003.

Capita had successfully bid for the image store, customer payments, and the links to retailers' packages. So that Transport for London could deal with one prime contractor, it awarded Capita the remaining two project packages related to managing the camera and communications. Selecting one company made the task easier. Capita responded by physically locating all people working on the project together in a single building in Coventry, in central England.

The project was delivered on time and on budget, and it has reduced traffic congestion more than originally projected. Its success was attributed to several project management aspects. First, scope creep was vigorously guarded against by limiting changes to the requirements. One of the few changes was an option for motorists to pay tolls through the popular SMS text messaging format. Second, Capita's deliverables were spread out over a manageable time scale, rather than concentrated toward the project's end. And third, there was strong top management support from political leaders.