On the Economics of a Parking Garage

The following article appeared recently in the Boston Globe. The article summarized the parking problems around Boston. It also listed typical construction costs and operating income/expenses for some garages, but did not offer an analysis to justify the high cost of parking.

This note will go step by step through an analysis to try to ascertain the profitability of a typical garage. Many of the data are not available from the newspaper article. The reader is asked to make estimates of reasonable numbers for inflation, depreciation, etc.

Parking garages are the bane and salvation of urban motorists. Bargain hunters may drive for hours searching for an inexpensive parking garage only to find the hourly rate in downtown Boston and Cambridge is as much as $3.

An option chosen by some frustrated drivers is to park at a less-expensive garage a distance from where they are going, and walking.

Ken Monahan used to park at First Franklin Parking at Post Office Square when it was a municipal garage and charged about $4.50 a day. Since it was sold last March, however, its rates increased to $3 an hour and $27 for all-day parking. Monahan now parks farther away and walks a few blocks to work.

"They take advantage of the supply and demand," said Monahan, who lives in Milton and works at Fidelity Investments. "The Common garage is $6 a day and that isn't bad. I could pay $10 a day. [Garages] are overpriced and there are not enough spaces and not enough public garages."

Boston and Cambridge parking problems have grown worse since 1974, when the Environmental Protection Agency mandated federal limits on the number of off-street parking spaces.

In downtown Boston, the EPA's parking freeze limited off-street commercial parking to 35,500 spaces. During the last few years, according to commissioner of transportation Richard Dimino, 20,000 private, non-commercial spaces have been added, but there is still a 5,000-space deficit.

The deficit is expected to increase to 15,000 by 1992, according to studies conducted by HMM and Cambridge Systematics Consulting, both private consulting firms.

An informal survey of 20 parking garages in Boston and Cambridge showed the hourly rate ranges from $1.50 to $3; all-day rates from $6 to $27.

Parking spaces turn over on the average of three times a day and the number of spaces varies from 100 to 2,000 per garage.

The highest rates - $3 an hour, $27 a day - were found at a private garage in the financial district, while the lowest were at a municipal facility, Boston Common Garage, which charges $2 an hour and $6 per day.

Off-street parking rates in Cambridge are comparable to Boston. Harvard Square, which, according to traffic commissioner George Tiso, used to be the city's worst parking area, now has more than enough parking due to Red Line renovations and more short-term parking from the University and Charles Square garages.

But Harvard Square still has a problem, Tiso said, because the cost of parking is relatively expensive. When the city operated garages there the daily rate was $6, he said.

Most garage managers polled said they were not at liberty to discuss annual income or operating expenses because of stiff competition among garages.

Daily income at the 700-space Charles Square garage in Harvard Square is about $5,000 with the average ticket bringing in $3, according to Richard Friedman, developer of the complex and co-owner. Annual overhead expenses, he said, including maintenance, staff and equipment, average about $1 million.

"We price the garage to encourage people to come for a few hours to stop and shop," said Friedman. "We want to encourage people, by pricing and how we run our garage, to stay for a few hours and then leave. Commuter parking is not one of our primary focuses."

The high cost of parking is determined, at least in part, by the increasing costs of building and maintaining garages, owners and managers said.

"It's not like it used to be with the old shells where you'd dump your car off," Friedman said. "Construction is expensive. Our garage is fully sprinkled, safe, well-lit and mechanically ventilated. We have security and are open 24 hours."

According to Michael Bowerman, vice president and director of operations at Morse/Diesel, Inc., the cost of a 1,500-space garage in downtown Boston can be as much as $33 million, depending on the number of square feet, the type of security and operating systems used and design of the project.

"Twenty thousand dollars to $30,000 per space isn't too far off the mark," said Bowerman, whose firm is building a parking garage in South Boston near Fort Point Channel.

"We have seen and anticipate some garages that cost $15,000 a space, but that's a pretty bare, not fancy, open air, above-grade garage. The cost can go all the way up to $30,000 a space depending on how fancy it is and depending on sprinklers and ventilation."

In addition to real estate, financing and construction costs, expenses for insurance, security, staff and maintenance, there are also equipment costs.

Standard parking garage equipment, which includes an entrance-lane ticket dispenser and gate, come under three categories: mechanical, stand alone and on-line computerized. Depending on how sophisticated it's equipment, a garage could spend anywhere from $9,000 to $100,000 per lane.

"A mechanical [dispenser], where you take the ticket from the dispenser and the gate goes up, costs about $9,000 to $10,000 per lane," said Carl Ashton, a consultant for Industrial Times, a garage equipment company in Norwood.

"The stand-alone computer, where the entry lane is the same but the exit booth has a gate and fee computer but still requires a human being, can cost $18,000. The full-blown, on-line system can cost $25,000 per lane, and depending on how sophisticated you want to get, it can cost up to $100,000 per lane."
According to Ashton, a facility like the Government Center Garage, with its three entry and three exit lanes, could cost $700,000 to equip if the most modern security and a computerized system were installed.

Among the less-evident costs that must be absorbed by garages are price cheating - sometimes done by swapping tickets from an automated ticket machine - or running the exit gate.

"I don't know how common gate running is at other garages but this was a city garage for 30-34 years, and as such, it cost $3 to $4.50 a day," said Frank Flannery, assistant manager at First Franklin Parking.

"When it was sold in March people who were used to paying $4 a day were then told to pay $27 and they would just drive right through the gate. We also get the midnight to 3 a.m. crowd doing all sorts of things, like running the gate. They spend all their money on entertainment and have none left for parking."

Case Study Questions - Parking Garage Case Study

1) For the Charles Square garage, what would be the estimated construction cost and annual revenue?

2) At a 10% discount rate, does it have a positive NPV after 10, 20, or 30 years?

3) Repeat question 2 with a 50% tax rate and straight-line depreciation for 20 years.