

Building the Business Case for Smart Transportation Stations

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Introduction

Public transportation provides a range of benefits to cities—from reduced CO₂ emissions and road expenditures, to broader improvements in quality of life. Convincing passengers to use public transportation at an airport, however, poses a range of challenges. Travelers usually have a variety of options for the next leg of their journey, and it can be difficult to obtain information on which one is best—particularly if the local language or airport layout is unfamiliar. Arriving airport passengers often default to taxi service in the absence of clear information about alternatives.



This paper calculates the costs and benefits of providing passengers with improved information, and shows a net benefit of around \$100 each day for a medium-sized airport.

Smart Transportation Stations

As part of the Smart and Connected Communities portfolio, the Cisco Smart Transportation Station (STS), consisting of Cisco's Digital Media Manager along with Digital Signs and Cast modules, aims to address the way passengers choose public transportation following air travel. The STS provides passengers with transportation and retail information both at the kiosk and through a set of screens deployed throughout an airport and its associated transportation hub. This kind

of detailed information on arrival, departure, and waiting times has been shown to improve public transportation patronage. In addition, the technology can be used to increase retail opportunities within the airport and transportation hub.

Benefits

Supporting documentation for the STS provides a list of benefits that range from collaboration to efficient administration. While these benefits are likely to be realized, they are difficult to quantify. A simpler approach is to make the business case based on the following four benefits. If the benefits exceed costs based on these components, then additional benefits can be presented as part of the broader transportation narrative without being quantified.



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1. Advertising Revenue

The kiosk and screens allow advanced advertising to be shown at the airport and the interchange. For example, advertisements could appear in Japanese when an inbound or outbound flight from Tokyo is scheduled.

2. Additional Retail Sales

The kiosks can produce coupons and other promotional material that are likely to stimulate retail sales. In addition, the connection speed of the kiosk may allow the purchase of high-definition filmed entertainment and other high-volume data services.

3. Improved Passenger Experience

By providing accurate estimates of waiting times, the STS reduces passenger uncertainty and the requirement to either “hurry” or “hang around” for the next service. This improves the passenger experience and can be quantified using the expected reduction in active wait times.

4. Increased Ridership

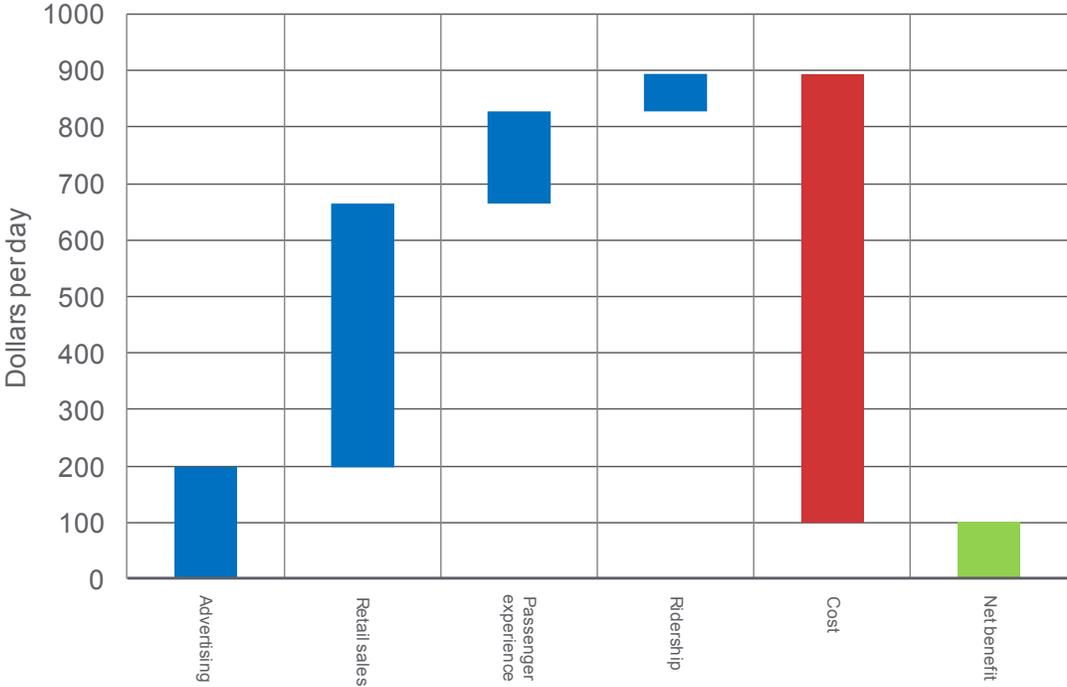
Accurate and accessible transportation information has been shown to have a material impact on ridership. The *Journal of Transport Geography* ranks the aggregate impact of improved information as an important factor in incremental ridership.

Example

A medium-sized airport (such as Montreal-Trudeau or Dulles) serves around 12 million passengers each year. An airport of this size is likely to require 15 STS kiosks and 45 screens. Our analysis of the impact areas outlined above suggests gross benefits of around \$868 per day. Assuming a commercial-strength Wi-Fi system is already installed in the airport, total cost of ownership over five years amounts to some \$767 per day.

The net benefit of the STS is, therefore, about \$100 each day, as illustrated in Figure 1.

Figure 1. STS Airport and Interchange Costs and Benefits



Source: Cisco IBSG Research & Economics Practice, 2011

Next Steps

Under this typical scenario, the STS proposal is a positive investment: costs are met by the airport authorities and the benefits are diffuse, going not only back to the authority but to passengers and retailers as well. As advertising and retail sales are the major benefit streams, securing the buy-in and financial support of airport retailers would be essential before continuing. In addition, the passenger experience benefit would likely be taken into account by public sector/city authorities, which provides a case for some public assistance.

All of the assumptions in this analysis have a conservative bias, and there are likely potential upsides. In particular, the ridership assumptions of a \$4 ticket and 1 percent uplift in ridership may be understated, leading to an increase in this benefit stream.

Implementing the proposal will require broad agreement among these stakeholders, along with some form of metrics to ensure that the expected benefits can be monitored and changes implemented as appropriate.

For more information on the implementation and broader issues of the STS proposal, please contact Anne Lange, Cisco IBSG Public Sector Practice, at langea@cisco.com. For the underlying assumptions and economic analysis, please contact Christopher Reberger, Cisco Research & Economics Practice, at creberge@cisco.com.

More Information

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