

How to Get into Personal Rapid Transit

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Introduction

Interest in personal rapid transit (PRT) is growing rapidly, and a wide variety of entities are now looking at purchasing, supporting and/or facilitating PRT applications of vastly differing sizes and complexities. Many of these entities are relatively new to the concept of PRT and, although enamored by it, may lack the skills to adequately protect themselves and/or their communities from the risks that may be involved. PRT is very easy for the user to understand, but it incorporates a number of technical aspects not easy for the owner to understand. Even those well versed in conventional transit will usually require many years of study and involvement before they comprehend all of the nuances associated with PRT.

There are now a number of PRT suppliers with paying clients and commercially available systems. Other entrepreneurs are developing new systems – each with the stated potential to provide even better service for less cost. Few system developers have the capital to both develop and commercialize their systems independently, and many are seeking projects suitable to allow the development process to be folded into a commercial application. This type of arrangement can bring benefits to all parties, but the risks must be thoroughly understood.

While the developer may (or may not) understand all of the risks involved, it is unlikely that the party, to be the beneficiary of the ultimate application, has the technical expertise to truly understand what they are getting into and how to



Masdar PRT System

mitigate their risks. In addition, the beneficiary needs the tools necessary to fully understand the different options that are available, in order to receive a PRT application that meets its needs. If one company is offering what seems like an unbeatable deal, there will often be others available with different offers that may or may not better meet the beneficiary's needs and, therefore, may warrant consideration.

This article is intended to provide a very brief overview of the activities involved in a typical PRT project. However, not all of these activities are necessarily required for each project. [continued on page 2 >](#)

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For more detail under each heading, visit www.prtconsulting.com.

Stakeholder Workshop

In situations where a PRT system is being proposed in a community environment, numerous stakeholders with differing interests are likely to be involved. One way to bring such a disparate group together and build consensus for a PRT system, and the way in which it is to be accomplished, is to hold a workshop of community leaders.

Public Outreach

Any proposed PRT system that could suffer from adverse public comment, should have a well thought-out public outreach program. Public education and input should commence before there is any chance of members of the public learning about the project and becoming upset,



ULTRa Maintenance Facility



Harbinger of Steam and PRT Ages

because there are aspects of it they do not understand or that get misrepresented in the press. There are many instances of good public projects being stopped in their tracks by a vociferous minority.

Route Planning

Guideway routing starts with the locating of stations. The process is iterative with the station locations being tweaked as the guideway routing is developed. Considerations include space availability, circuitousness, visual intrusion and bottlenecks.

Ridership Projections

Ridership projections are likely to underpin the feasibility of the PRT system. Except for those few applications where PRT is the only form of transportation (a must-ride system), people may or may not

choose to use it for a wide variety of reasons. The success (revenue) of a PRT system will almost always be closely tied to ridership. Accurately estimating the future ridership is, thus, usually a key activity. Accomplishing this successfully will take the skills of expert traffic engineers coupled with knowledgeable PRT consultants.

Benefit/Cost Evaluation

The purpose of a benefit/cost evaluation is to determine if the overall benefits to society exceed the overall costs. Typically, the quantifiable benefits are divided by the quantifiable costs. If the resulting ratio is greater than 1.0, the project is considered viable from this standpoint. Viability from a benefit/cost standpoint does not necessarily imply financial feasibility, since it may not be possible to monetize all of the benefits. Financial feasibility is discussed under Business Plan.

Risk Analysis and Mitigation

Both technical and business risks should be analyzed in detail. While

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PRT is a relatively new technology, most aspects involve off-the-shelf technology, and the primary technical risks relate to how this technology is integrated and how it functions under public use. An exception to this is the control system.

Business Plan

A business plan for a PRT project should address issues, such as projected capital and operating costs, revenue projections, funding sources, break even analysis, return on investment and overall financial viability. The revenue projections will be heavily dependent on the projected ridership and the relationship (elasticity) between ridership and fare rates.

Implementation Plan

The implementation plan should lay out the steps to be taken to implement the project. It should spell out

who is responsible to do what by when. It may be folded into the Business Plan.

Permitting

It is recommended that permitting requirements be investigated fairly early in the project. They can vary quite dramatically from jurisdiction to jurisdiction and can have a significant impact on costs and schedules. If federal funding is involved, permitting is likely to include meeting the requirements of the Environmental Protection Agency.

Procurement

The most common procurement method for automated transit systems is design/build/operate/maintain (DBOM) with options relating to things like financing and ownership. The complete range of possible procurement methods runs from an owner providing a vendor (who takes complete responsi-

bility for financing, constructing and operating his system) with right-of-way and a license, to an owner planning, designing, developing, manufacturing, building and operating his own system. The risks and rewards vary greatly, with DBOM being the method that most owners feel balances them best.

Testing

The construction, manufacturing, installation and operation of a PRT system must be thoroughly tested to ensure compliance with numerous specified requirements.

More at www.prtconsulting.com. 



Vectus PRT Station

UPCOMING CONFERENCES

ACC/AAAE Symposium

February 2010 • Atlanta, Georgia

<http://events.aaae.org/sites/100201/index.cfm> (Visit the PRT Consulting exhibit)

Passenger Terminal Expo 2010

March 2010 • Brussels, Belgium

<http://www.passengerterminal-expo.com/>

82nd Annual AAAE Conference

May 2010 • Dallas, Texas

<http://events.aaae.org/sites/100501/index.cfm>