

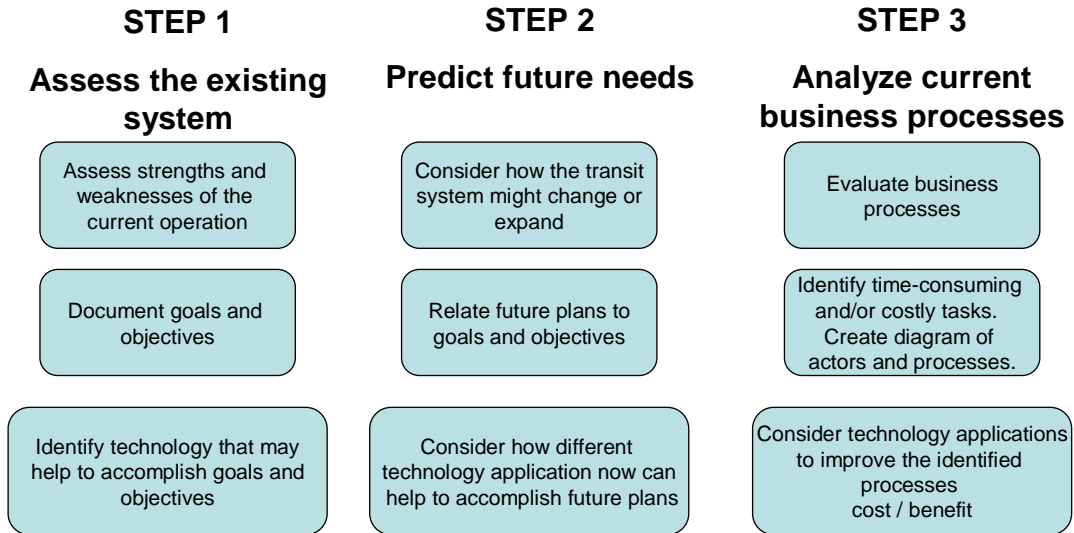
**Lesson 2: Technology Applications**  
**Major Transit Technologies Grouped by Function**

<b>Technology Tool</b>	<b>Function</b>
Accounting Software	Electronically processes, stores, tracks, and reports accounting data. Produces financial reports. This information can be used to improve financial accountability.
Automatic Passenger Counters (APC)	Collects data on passenger boarding and alighting by time and location. Produces reports on boarding and alighting activity by stop or by time of day. This information can be used to increase operating efficiency through better service planning.
Automated Scheduling and Routing Software	Automatically routes and schedules transit services. For a fixed route system, produces schedules for most efficient assignment of vehicles and operators. For a demand response system, expedites call taking; automatically schedules trips and routes vehicles; collects and maintains client, service, and vehicle data; generates driver manifests; and generates standard and customized reports. This information can be used to improve overall system efficiency and productivity to manage and operate transit services.
Automated Vehicle Location Systems (AVL)	Measures real-time position of transit vehicles using onboard computers and positioning system such as global positioning system (GPS) or signpost. Relays the information to a central location such as a central dispatch center. This information can be used to know where each vehicle is located at any point in time and can be used to improve scheduling and dispatching to increase productivity.
Communications	Provides voice and/or digital communication among vehicles and between vehicles and the base station or central dispatch center. Communication maybe by radio, cell phone, or mobile data terminal.
Computer-Assisted Software for Demand Response Transit	For a demand response system, expedites call taking; collects and maintains client, service, and vehicle data; generates driver manifests; and generates standard and customized reports. Differs from Automated Routing and Scheduling Software in that it does not automatically schedule trips and routes vehicles. Requires manual scheduling of trips and assignment of vehicles. This information can be used to improve efficiency and productivity in customer service, scheduling, and administration.
Electronic Payment System	Allows passengers to pay for transportation services with electronic fare media. This includes automated fare payment systems such as bar codes, magnetic stripe cards, and Smart Cards. Electronic payment systems may improve customer service and convenience and assists transit managers to report and collect fare revenues more efficiently.
Geographic Information System (GIS)	Computerized data management system in which databases are related to one another using a common set of location coordinates. GIS is used by dispatchers to display fleet and route data on a display map on a computer screen.
Interactive Voice Response	Automates interaction with telephone callers. Historically, IVR solutions have used pre-recorded voice prompts and menus to present

<b>Technology Tool</b>	<b>Function</b>
	information and options to callers, and touch-tone telephone keypad entry to gather responses. IVR solutions enable transit users to retrieve information about routes, schedules, and more from any telephone. Additionally, IVR solutions are increasingly used for demand response transit to place outbound calls to deliver messages such as reminders of the time a scheduled transit trip will arrive.
Internet Web Site	Allows personal computer users to easily exchange or display transit service information such as trip requests, route schedules, and maps.
Vehicle Management Information System (VMIS)	Electronically processes, stores, and reports detailed vehicle maintenance and repair data, including parts and supplies inventories, and may also track fuel. Generates standard and customized reports. This information can be used to monitor vehicle preventive maintenance accountability.
Mobile Data Terminal (MDT) or Mobile Data Computer (MDC)	Serves as the information link between the control or dispatch center and driver to relay relevant information such as driver, route, trip and rider information. Electronically stores and updates vehicle schedules (driver manifests). This can be mounted in a vehicle or can be hand-held personal electronic device. The terms for MDT and MDC are often used interchangeably; however, an MDT may be used to refer to a terminal where data can be received and acknowledged only. An MDC typically refers to a device where important information can be sent as well as received.
Personnel Management Software	Processes, stores, tracks and reports detailed payroll benefits, hours worked, and personnel information. Generates standard and customized reports. This information can be used to improve overall personnel management and financial accountability.
Signal Priority	Holds a traffic signal at green so that a particular vehicle may pass through the intersection more quickly.
Traveler Information Systems	When applied to transit, traveler information can take many forms, including pre-trip information, in-vehicle information, and in-terminal/wayside information. Examples are automated trip itineraries, in-vehicle annunciators, variable message signs and monitors, and interactive information kiosks.

# TECHNOLOGY WORKSHOP: IDENTIFYING TRANSIT SYSTEM NEEDS

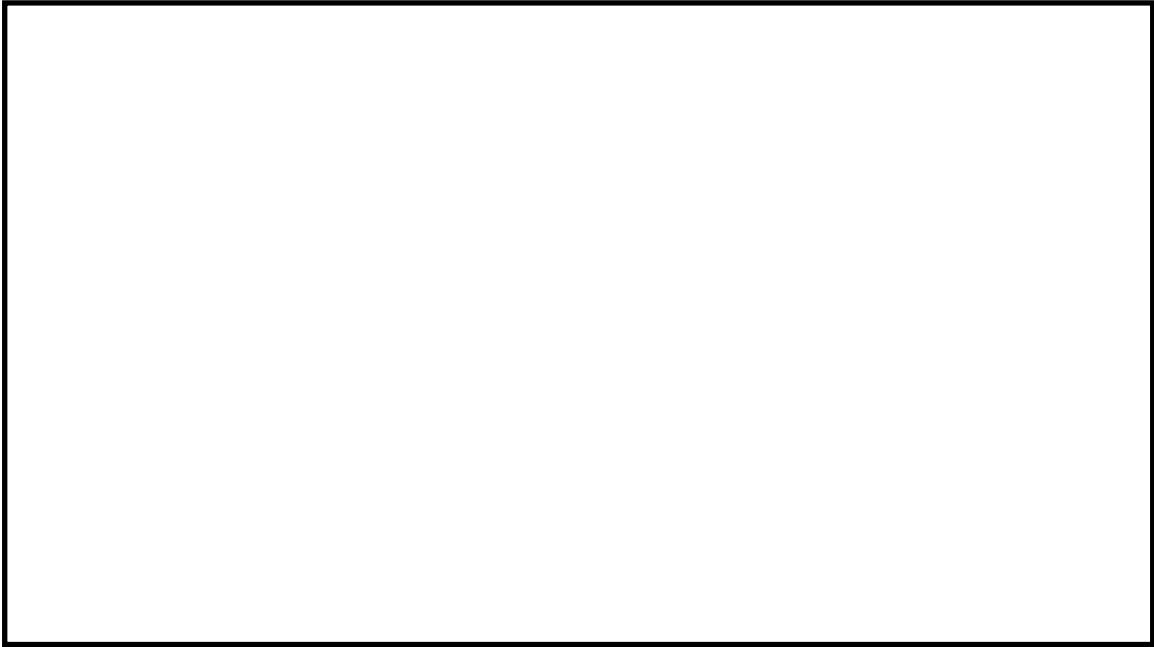
## Technology Decision Tree



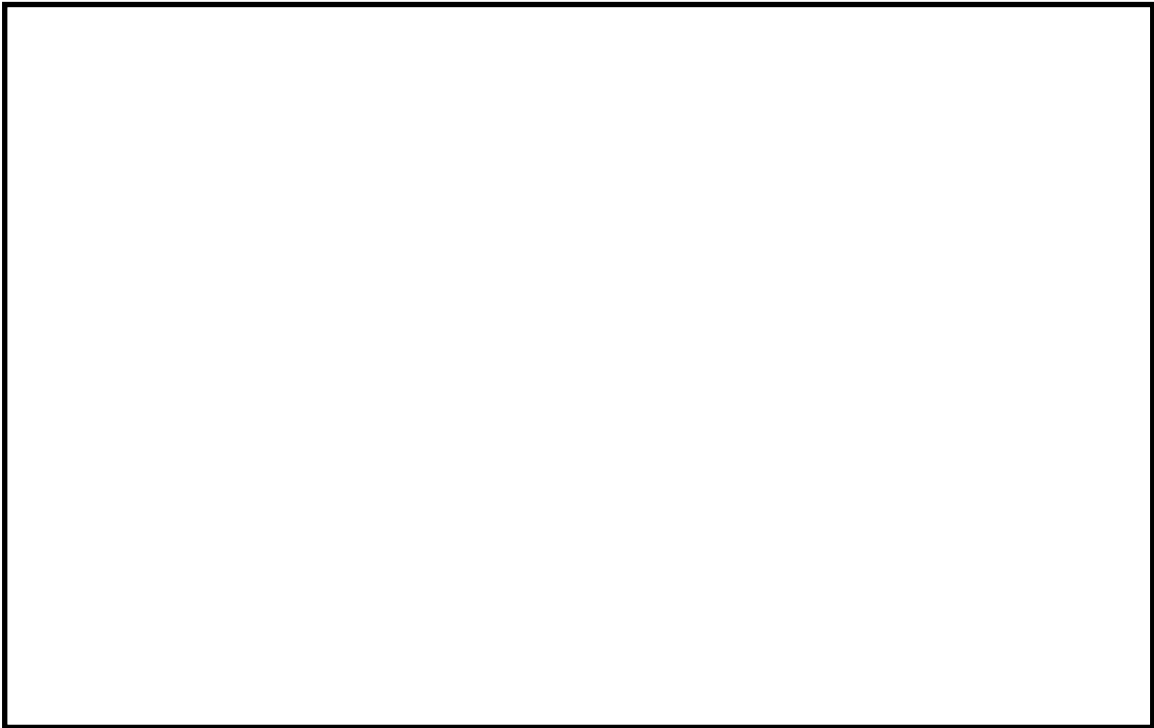
### *Step 1: Assess the existing system*

#### **1.A. Assess strengths and weaknesses of the current operation**

**1.B Document goals and objectives**

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**1.C. Identify technology that may help to accomplish goals and objectives**

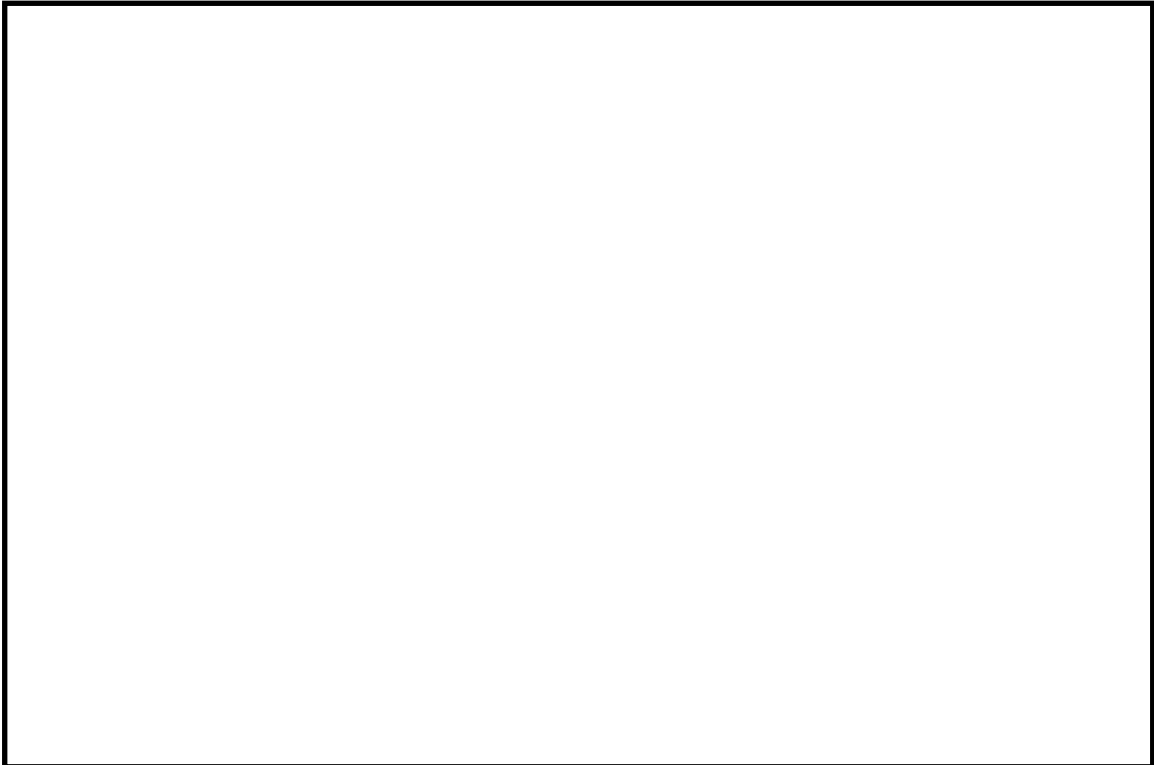
A large, empty rectangular box with a black border, intended for identifying technology that may help to accomplish goals and objectives.

**Step 2: Predict future needs**

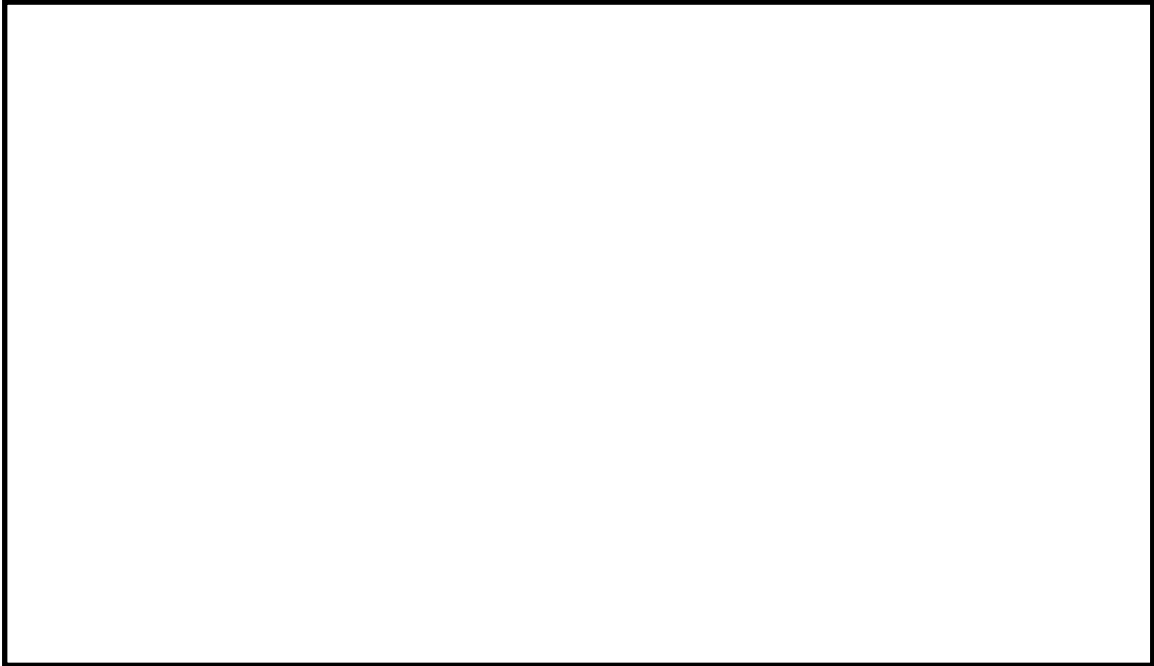
**2.A Consider how the transit system might change or expand**

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**2.B Relate future plans to goals and objectives**

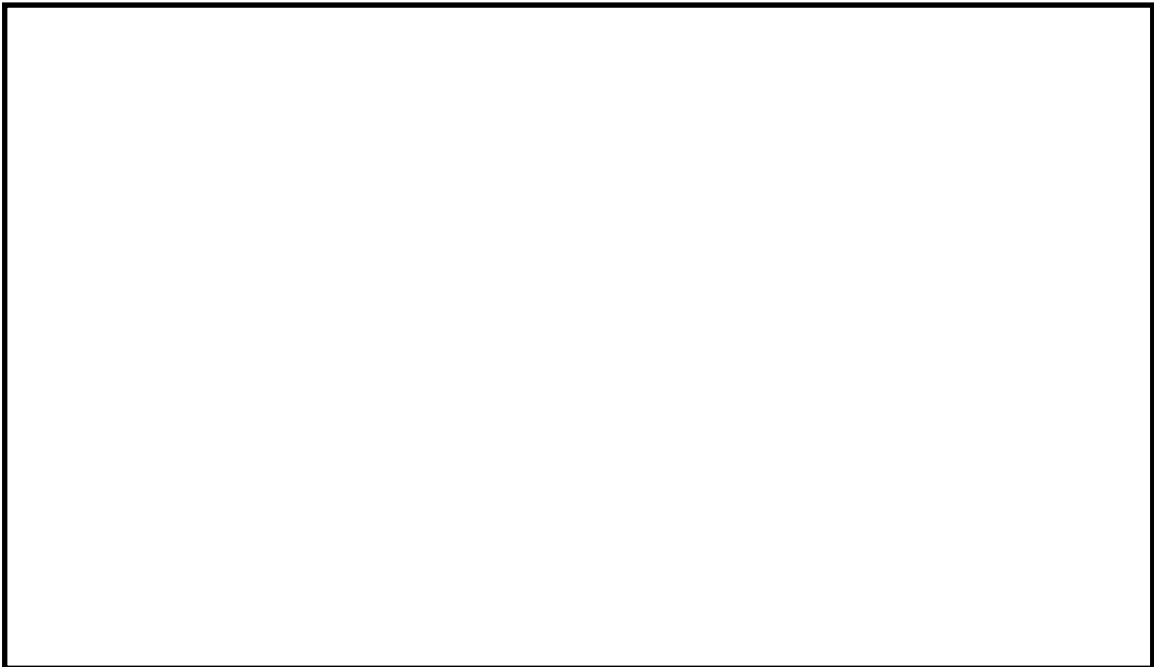
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**2.C Consider how different technology application now can help to accomplish future plans**

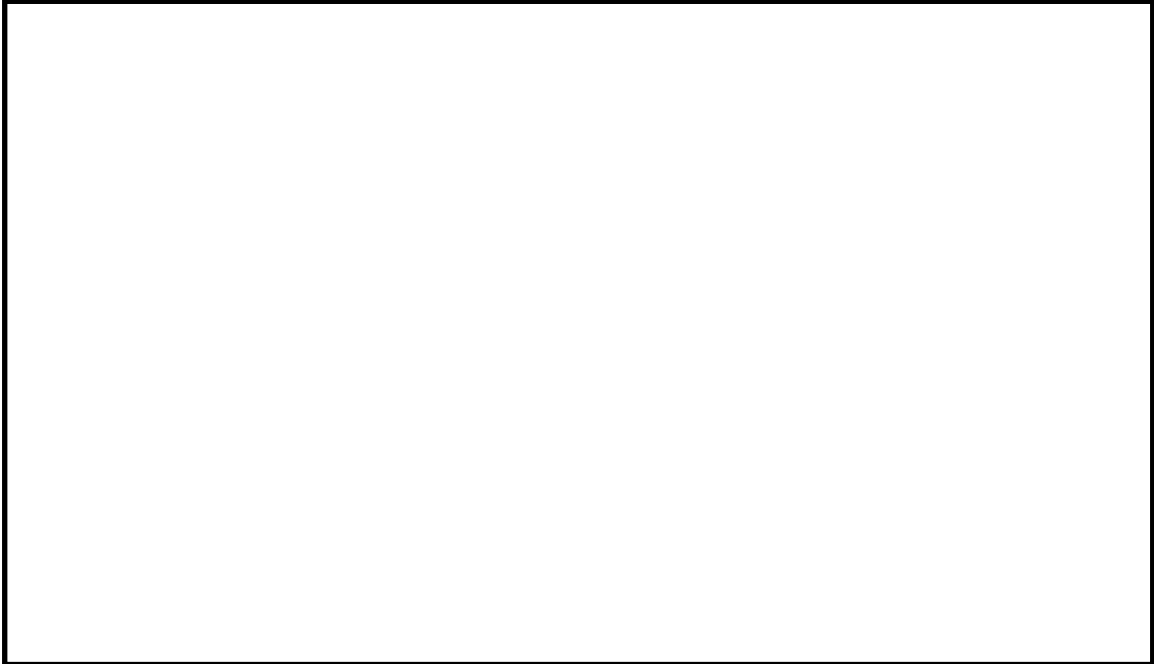


**Step 3: Analyze current business processes**

**3.A Evaluate business processes**



**3.B Identify time-consuming and/or costly tasks.**



**3.C Consider technology applications to improve the identified processes cost/ benefit**

