

# Key Findings & Recommendations

22<sup>nd</sup> Annual Conference & Trade Show  
 Long Beach, CA  
 September 30, 2008

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 Fleet Mgmt Consulting



MAXIMUS, Inc.

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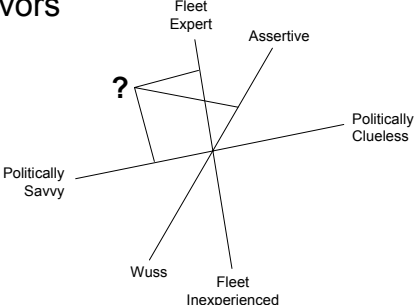
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## Fleet Personnel Come in All Flavors




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## Truths

- Most government leaders *think* they know all they need to know about fleets
- Most government leaders are clueless about fleet operations
- Most Fleet Managers have a very difficult time in getting the time and attention to educate their leaders, let alone those higher up and in other organizations

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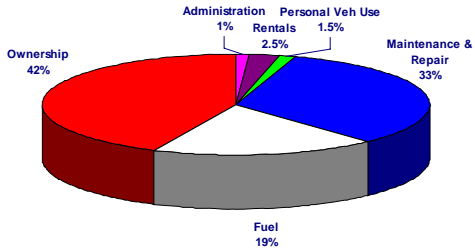
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## Typical Governmental Fleet Dollar



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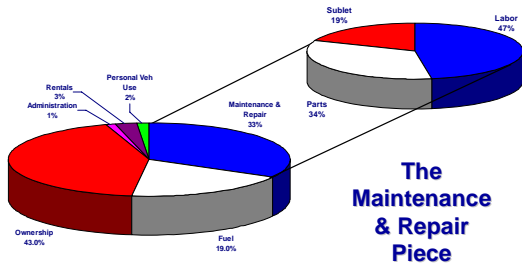
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## Typical Governmental Fleet Dollar



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## The Single Biggest *Black Box*



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## More Truths – Financial Knowledge

- Most government leaders are clueless about fleet costs
- Many government leaders do not know what an ISF is – let alone how one is supposed to work
- Most Fleet Managers have minimal understanding of government finance

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## Government Fund Accounting

- What is a fund?
  - A fund is a separate fiscal and accounting entity
- Why do state and local governments use fund accounting?
  - GAAP requirement
  - Legal compliance
  - Segregates financial resources for specific purposes

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## Government Fund Accounting

- How do governments structure their many funds?
  - Three GAAP categories
    - ◆ Governmental
    - ◆ Proprietary
    - ◆ Fiduciary
  - Seven generic fund types
  - Two account groups for general fixed assets and general long-term debt

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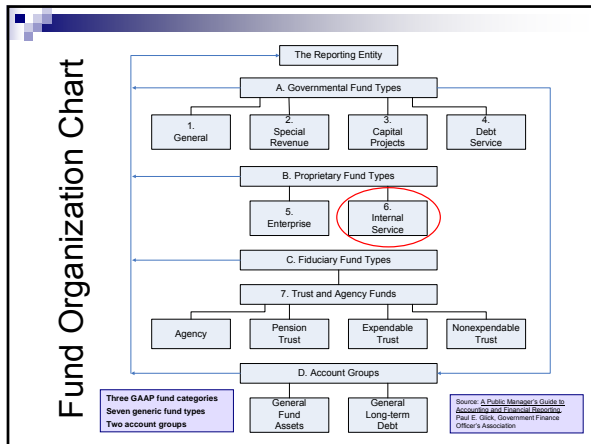
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- ### Internal Service Funds
- Used to account for government-sponsored operations that provide goods or services primarily to other departments within the same government, or to other governments, on a cost-reimbursement basis
  - Allow for *full cost recovery* from consumers of goods or services (however, GAAP does not *require* that ISFs use fully burdened costs)
  - Not intended to over- or under-recover costs (surpluses and deficits)

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### Internal Service Funds (cont'd)

- Perceived duplications of expenses

Fleet ISF - Parts		Customer Agency - Parts	
Cost	Revenue	Cost	Revenue
\$150			
	\$150	\$150	

Total cost of "Parts" = \$300 ???

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## Internal Service Funds (cont'd)

- Budget must be permitted to float
  - Ex. Rash of accidents
  - Ex. Natural disaster
- Vehicle and equipment using agencies are responsible for their fleet and for getting the resources needed to keep it going
  - Ex. Fuel
  - Ex. Additional vehicles
  - Ex. Maintenance

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## Internal Service Funds (cont'd)

- Understand your lines of business
  - If I spend time or resources on it, can I charge for it?
  - If I am charged for it, can I charge for it?
- Educate:
  - Bosses
  - Budgeting authorities
  - Finance (?)
  - My customers
  - My employees

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## Business Plan

- Easy to understand
- Only a few pages
- Recognizes both strengths and challenges
- Targeted to bosses and customers
- Simple, clear objectives

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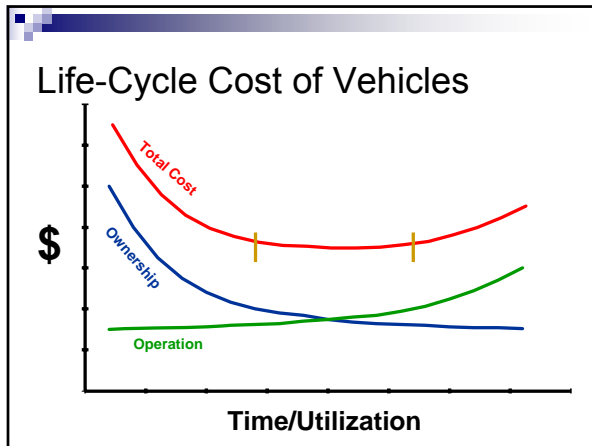
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- ### Economic Life
- 30 Years
    - 1-year life-cycle – 30 vehicles
    - 2-year life-cycle – 15 vehicles
    - 3-year life-cycle – 10 vehicles
    - 4-year life-cycle – 7.5 vehicles
    - 5-year life-cycle – 6 vehicles
    - 6-year life-cycle – 5 vehicles
    - Etc.

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### Economic Life 1-Year Vehicle

■ Purchase price (w/upfitting)	-\$24,000
■ Resale	+\$17,760
■ Discount rate (1 year)	3.420%
■ PV of resale	+\$17,173
■ NPV of vehicle	-\$6,827
■ Maintenance	-\$1,898
■ PV of maintenance	-\$1,861
■ NPV total	-\$8,688

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### Economic Life 2-Year Vehicle

■ Purchase price (w/upfitting)	-\$24,000
■ Resale	+\$14,400
■ Discount rate (1 year)	3.860%
■ PV of resale	+\$13,350
■ NPV of vehicle	-\$10,650
■ Maintenance	-\$3,268
■ PV of maintenance	-\$3,126
■ NPV total	-\$13,776

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### Economic Life (contd.)

	NPV	NPV/Per Year
■ 1-year	-\$8,688	-\$8,688
■ 2-year	-\$13,776	-\$6,888
■ 3-year	-\$17,314	-\$5,771
■ 4-year	-\$20,897	-\$5,224
■ 5-year	-\$23,292	-\$4,658

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### Economic Life (contd.)

#### Equivalent Annual Cost (EAC)

$$EAC = NPV \times \frac{r(1+r)^n}{(1+r)^n - 1}$$

(Where *r* is the discount rate less inflation and *n* is the period of time)

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## Economic Life (contd.)

	EAC
■ 1-year	\$8,768
■ 2-year	\$7,029
■ 3-year	\$5,974
■ 4-year	\$5,475
■ 5-year	\$4,963

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## Economic Life (contd.)

EAC is often used as a decision making tool in capital budgeting when comparing investment opportunities of unequal lifespans.

A practical example where the cost of capital is 5%:

Machine	A	B
Investment cost	\$50,000	\$150,000
Expected lifetime	3 years	8 years
Annual maintenance	\$13,000	\$7,500
EAC	\$31,360	\$30,780

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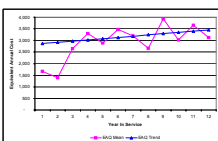
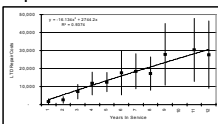
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## So When Should Vehicles be Replaced? Dump Trucks



- 1473 units in sample
  - $R^2 = 0.9374$
- Significant cost increase in year 9
  - Cost deviation increases \$15,000
- EAC declines years 6 to 8
- Life Cycle:
  - 8 Years

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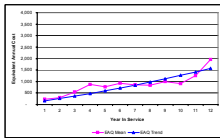
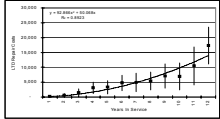
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## So When Should Vehicles be Replaced? Administrative Sedans



- 1484 units in sample
  - R<sup>2</sup> = 0.8923
- Initial jump in cost years 3 to 4 and 5 to 6
  - EAQ costs level years 4 to 10.
- Costs begin to rise again in year 9 and increase significantly in years 11 and 12.
- Life-Cycle:
  - 8 years

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## Types of Lives

- Economic life
- Technological life
- Service life

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## Replacement Planning

- Tactical
- Strategic

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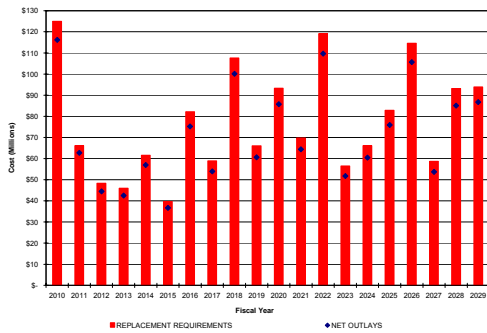
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## Baseline Strategic Replacement Plan




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## Key Statistics

■ Original Purchase Price	\$6.5 M
■ Estimated Book Value	\$2.3 M
■ Average Vehicle Age	6.6 yrs
■ Number of Units	255
■ Avg. Vehicle Life-to-Date Miles	42,540
■ Avg. Recommended Replacement Cycle	7.7 yrs
■ Estimated Replacement Cost	\$10.8M
■ Avg. Annual Replacement Cost	\$1.5 M
■ Avg. Investment per Year for Last Five Yrs	\$1.0 M

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## Reduced Replacement Spending

- Increase in total cost
- Increase in turn-around time
- Decrease in vehicle availability
- Increase in breakdowns
- Decrease in salvage value
- Customer dissatisfaction
- Fleet creep

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## Downsize the Fleet to Reduce Cost

- How many miles per year do you need to drive and be reimbursed at \$0.585 per mile before it becomes more cost effective to provide the driver with a state-owned sedan?

1,500 administrative sedans	8 yr. avg. life
1 to 12 years of age with majority in 2 to 7 year range	16,000 avg. annual mileage
\$14,000 avg. cost of sedan	\$0.042 avg. maintenance cost per mile
\$2,100 anticipated salvage value	\$0.20 avg. fuel cost per mile

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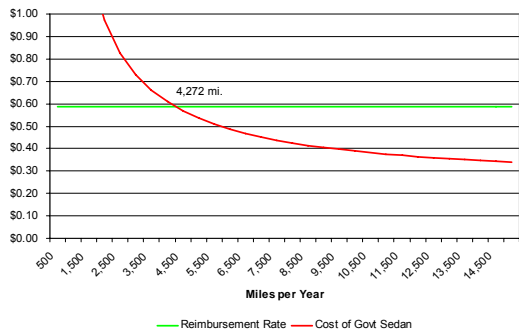
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## Downsize the Fleet to Reduce Cost




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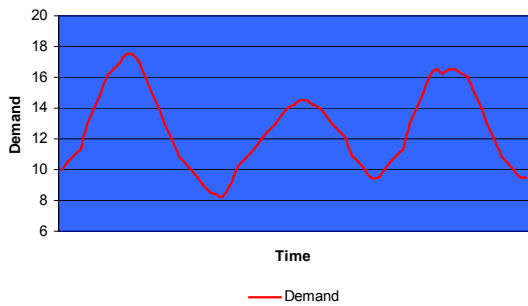
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## Optimization Theory




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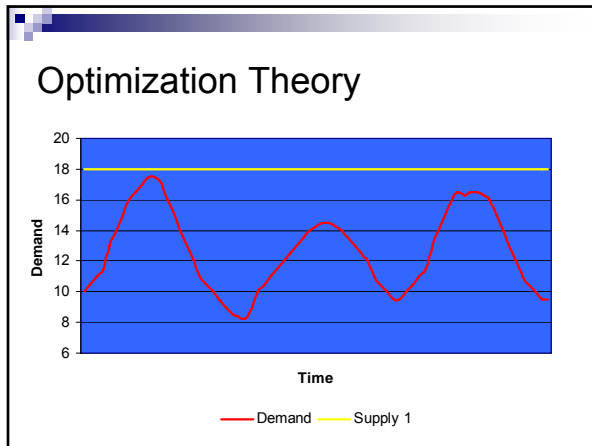
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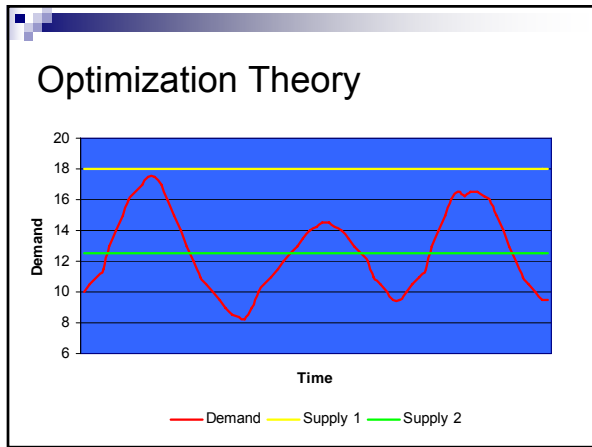
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**MOTOR POOL OPTIMIZER**

Please enter the requested information about your fleet.

**Fleet Specifications**

People served:

Demands per day:

Workdays per year:

**Owned Vehicles**

Daily ownership cost:

Utilization cost (per mile):

Mean Time Out:

Mileage per dispatch:

Percent of demand satisfied:

**Alternate Vehicles**

	% of Total	\$/Unit Time	\$/Mile	Miles/Dispatch	Days/Dispatch
Daily Usage:	<input type="text" value="80 %"/>	<input type="text" value="\$31.50"/>	<input type="text" value="\$0.05"/>	<input type="text" value="75 miles"/>	<input type="text" value="1.2 days"/>
Weekly Usage:	<input type="text" value="15 %"/>	<input type="text" value="\$157.00"/>	<input type="text" value="\$0.05"/>	<input type="text" value="450 miles"/>	<input type="text" value="7.5 days"/>
Monthly Usage:	<input type="text" value="5 %"/>	<input type="text" value="\$567.00"/>	<input type="text" value="\$0.05"/>	<input type="text" value="1200 miles"/>	<input type="text" value="20.6 days"/>

How many people are served by the fleet?

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## In Summary

- Financial structure
- Educate on how you are financed
- Business plan
- Life-cycle cost
- Strategic replacement plan
- Downsize to reduce cost
- Optimization theory

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