

Wider benefits of public transport: an evolving concept with evolving uses

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Agenda

1. In the beginning... the benefits of transport
2. The origins and evolution of cost benefit analysis
3. Redefining the concept of “wider” benefits
4. Application, uses and issues to be resolved

(1) In the beginning...

***Evolving motivations
(and hence benefits)
of passenger transport***

Looking back...

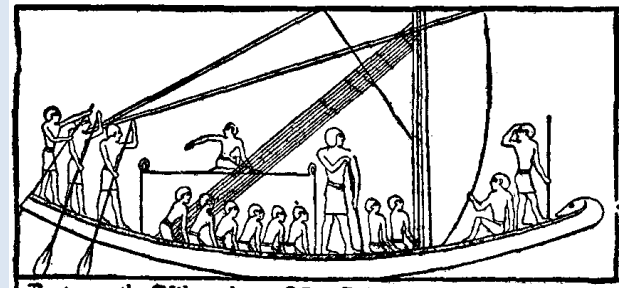
motivations for passenger transport

Private operators

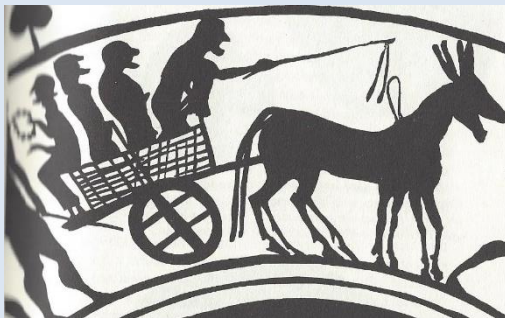
2000 BC: Mesopotamia
- caravans for trade



1500 BC: Egypt - Nile tourism
“booze cruise”



600 BC: Greece - carts for visits
to the countryside



1630: Boston – chartered urban
ferry service, enabling city growth



Looking back...

motivations for scheduled services

Private operators

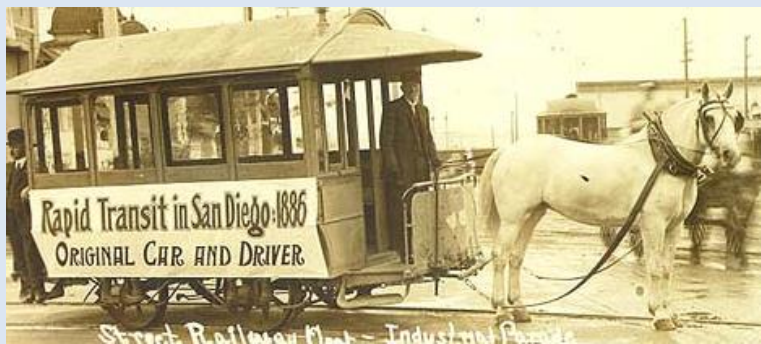
1662: Paris - public omnibus to enable urban movement



1890's electric underground to relieve surface congestion



1850's "*rapid transit*" concept



Boston Tremont Street



Looking back...

motivations for scheduled services

1850-1920 enabling urban centers to develop, bringing workers to jobs



Sorber, J. W. Leonard, The industries of St. Louis, 1887 (Westliche Post building* by Wittenberg)



Pittsburgh



Copyright 1906 by the Rotograph Co.
10862 Main Entrance.

The Florida Ostrich Farm, Jacksonville.



Streetcar to Bates Rubber Company, Denver's Street Railways

Development of “streetcar suburbs”

(1850-1920) streetcars sponsored by developers, enable middle class suburbs in N. America

THE SUNDAY OREGONIAN, PORTLAND, JUNE 28, 1906.

\$10 STARTS YOU ON ROAD TO PROSPERITY IN HYDE PARK

NO INTEREST TAXES TOPAY

HYDE PARK

Prosperity follows the Street Car Line

Fill Out and Mail This Coupon

THE JAGGER-STONE COMPANY
1001 First Street, N.E.

Customer—I would like to know more about the property you would furnish me for \$10 a month.

Name _____
Address _____
City _____

Whether you buy Real Estate for investment or to build a home, the popular location is

Fill Out and Mail This One Too

THE JAGGER-STONE COMPANY
1001 First Street, N.E.

Conditions—Please keep my name on this card until I am informed what you would like to purchase.

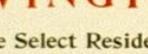
Name _____
Address _____
City _____

HYDE PARK

IRVINGTON


The Select Residence

District
of
Portland



Two
Lines
of
Street
Cars

Every Fifteen Minutes





enabling a new quality of life and access to recreation

Looking ahead...

Public policy today

Public sector activities

Improving air quality



Reducing congestion, increasing reliability



Enabling high tech business clusters



Enhancing remote airport access



Intended investment benefits

- Recreation, tourism
 - Access to jobs
 - Urban development
 - Saving time (*rapid transit*)
 - Improving reliability (*congestion reduction*)
 - Improving Intermodal access
 - Quality of life (*livability*)
 - Equity effects (*socio-economic & spatial distribution*)
- } industry tech clusters

(2) The origins and evolution of cost benefit analysis

...solutions and new problems...

Before Cost-Benefit Analysis

*Pre 1936 - objective-based planning approach,
...based on any of the following strategic goals:*



Erie Canal, 1825+

Saving traveler time
Saving traveler cost
Congestion / reliability
Safety

Access to jobs, business
Intermodal connectivity

Recreation, tourism
Urban commercial centers
Regional economy
Technology clusters

Pollution Emissions

Freight Logistics

Quality of life, livability
Social-economic equity

1 – Precursor of Cost-Benefit Analysis

1936 (US) – required efficient use of government waterway investment funds ... “the benefits to whomever they accrue [be] in excess of the estimated costs”



San Leaondro Waterway
Army Corps of Engineers

Saving traveler time

Saving traveler cost

Congestion / reliability

Safety

Access to jobs, business

Intermodal connectivity

Recreation, tourism

Urban commercial centers

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Quality of life, livability

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2 – Formalization of Cost-Benefit Analysis

1960s – welfare economics: concept of utility (value) to the user, based on price signals and willingness to pay, with “externalities” due to inefficiency in prices. (Assumes independence of effects.)



San Monica Freeway, 1963

Saving traveler time

Saving traveler cost

Congestion / Reliability

Safety

Access to jobs, business

Intermodal connectivity

Recreation, tourism

Urban commercial centers

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Quality of life, livability

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3 - Expanded Cost-Benefit Analysis

*1970s and 1980s – Evolution of what we now refer to as “Traditional Cost Benefit Analysis “
= expanded user value + pollution produced by users*



Los Angeles Subway

Saving traveler time

Saving traveler cost

Congestion / reliability

Safety

Pollution Emissions

Access to jobs, business

Intermodal connectivity

Freight Logistics

Recreation, tourism

Urban commercial centers

Regional economy

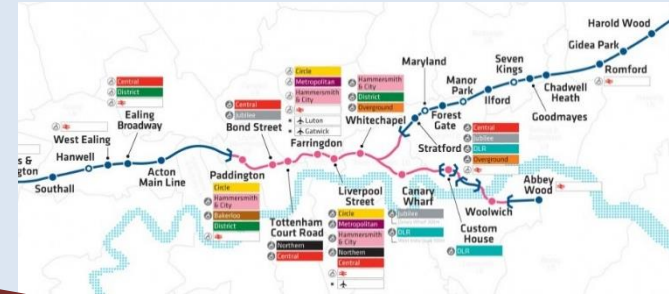
Technology clusters

Quality of life, livability

Social-economic equity

4 – Add “Wider Economic Benefits” in CBA

*2005-2006 Eddington Transport Study,
UK Dept. for Transport discussion papers,
WebTAG guidance (agglomeration effects on GDP)*



Crossrail plan (London)

Saving traveler time
Saving traveler cost
Congestion / reliability
Safety

Pollution Emissions

Access to jobs, business
Intermodal connectivity

Freight Logistics

*UK
agglomeration,
competition,
labour force
participation rate*

*Recreation, tourism
Urban commercial centers
Regional economy
Technology clusters*

*Quality of life, livability
Social-economic equity*

*US
supply chain
delivery reliability*

(3) Redefining the concept of “wider benefits”

...alternative perspectives

Economic Development Perspective

1960s – inter-industry, inter-region economic models

1990s – application of economic models for transport

Saving traveler time
Saving traveler cost
Congestion / reliability

Access to jobs, business
Logistics: technology adoption
Intermodal connectivity

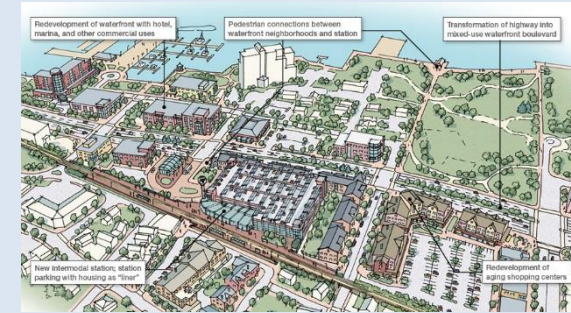
Recreation, tourism
Urban commercial centers
Regional economy
Technology clusters

US
Inward investment
& export substitution

Pollution Emissions

Safety

Quality of life, livability
Social-economic equity



Plan for South Coast Rail
(Massachusetts)

Multi-Criteria Perspective

*1960s – multi criteria decision analysis, appraisal table
...accounting for social factors and values
Today – (US) dominant method for prioritization*



U.S. "Livable Communities"

**Saving traveler time
Saving traveler cost
Congestion / reliability**

Pollution Emissions

**Access to jobs, business
Intermodal connectivity**

Freight Logistics

**Recreation, tourism
Urban commercial centers
Regional economy
Technology clusters**

**Quality of life, livability
Social-economic equity**

Examples of Multi-Criteria Rating Factors

Traveller Benefit & Environment (quantitative)

Efficiency: Travel time, cost, level of service

Safety: collision rate and severity

Pollution: emissions/greenhouse gases

Strategic (System Productivity) Benefit

Intermodal access & interchange

Improve freight logistics

Social Goal Achievement (qualitative)

Location: area revitalization / regeneration

Land use: cluster or in-fill development patterns

Econ policy: support target industry growth

Leverage: private investment, financial sustainability

Inclusion: equity for underserved groups

Supports health and quality of life

Macroeconomic Outcomes quantitative)

Job Growth, reduced unemployment

Income and Gross Regional Product

Implications
for:

Performance
Indicators

--

Contracting
elements

--

Public-private
roles

(4) Applications, Uses and Issues

...how do they matter?

Decision steps

Formal Progression of Decisions & Plans:



Differences in:

Stakeholders

--

Decision-
makers

--

Institutional
processes

Required Information

- Overall Benefit and Cost

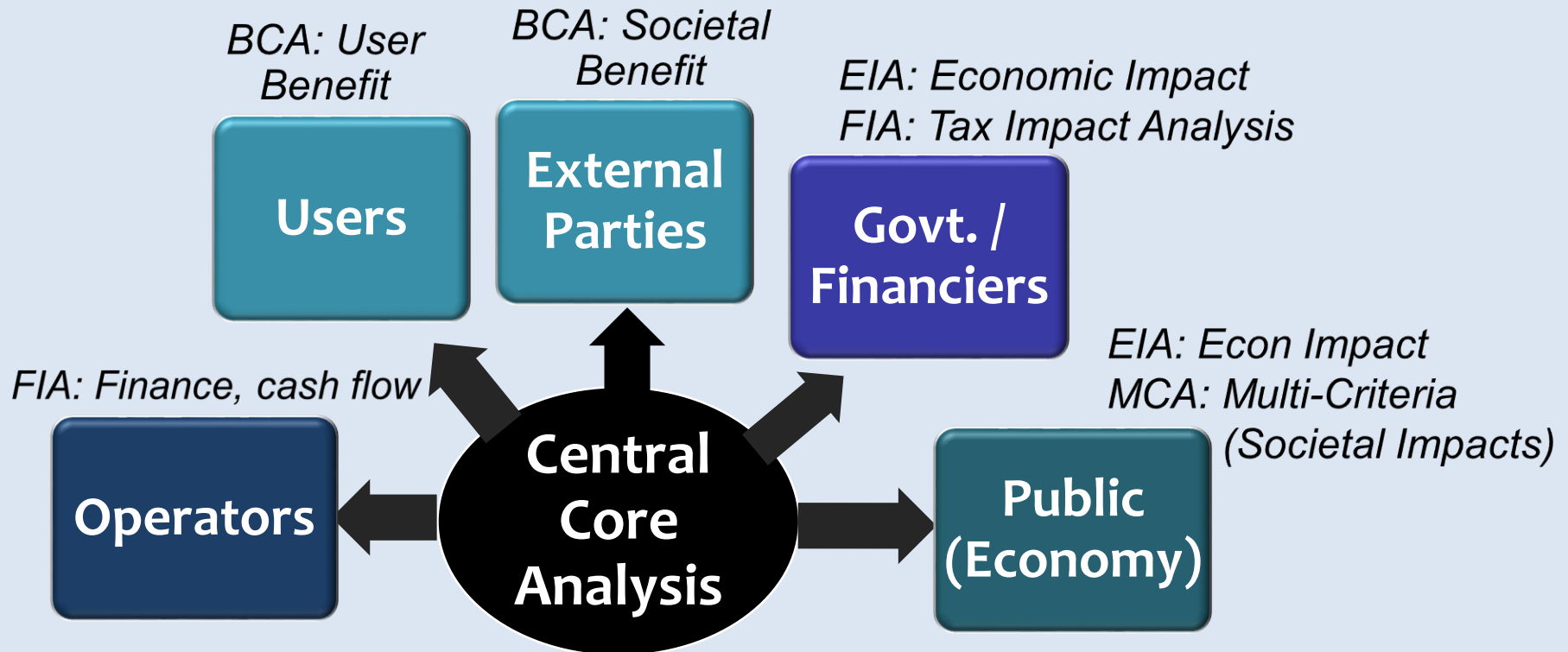
- Distribution of impacts:

- elements of economy & society (who)
- spatial locations (where)
- Timing of impacts (when)



Decision Information

Various decision-makers require data reflecting different perspectives.



Moving forward



Need to consider...

- Investment goals:
public policy vs. contractor objectives
 - Performance measures:
broader outcomes vs. narrower outputs
 - Financial arrangements:
cost and revenue sharing opportunities
 - Tendering and contracts:
reflect goal and performance factors
 - Evolution of arrangements:
changing institutional roles and boundaries
- Apply CBA to assess wider effects of alternative contract regimes, including incentive structures, transaction and administration costs, and benefits to a wide variety of different stakeholder parties.