<table>
<thead>
<tr>
<th>BAKERY vs PUBLIC GOOD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BAKERY</strong></td>
</tr>
<tr>
<td>• Clear provider/customer</td>
</tr>
<tr>
<td>• Competition</td>
</tr>
<tr>
<td>• Individual choice</td>
</tr>
<tr>
<td>• Flexibility, bankruptcy</td>
</tr>
<tr>
<td>-- writedown of assets</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td>• Technology &amp; innovation</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>• Marketing</td>
</tr>
</tbody>
</table>
Contingency role

“Rider” on auto system
HISTORY

(a) Private, with regulation

(b) Public private, with public capital
   1900 --> 1950 --> 2004
   -->

(c) Public with public funding
    operating and capital 2004
    1950 --> 1970 --> 2004
    -->
# Relation to Auto

<table>
<thead>
<tr>
<th>Period</th>
<th>AUTO</th>
<th>TRANSIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre 1914</td>
<td>Local public roads</td>
<td>Regulation; vehicles by private company</td>
</tr>
<tr>
<td>1914-1940</td>
<td>Federal, state roads</td>
<td>Tax paying, regulated</td>
</tr>
<tr>
<td></td>
<td>Local zoning</td>
<td>Vehicle infrastructure by private/public</td>
</tr>
<tr>
<td></td>
<td>Vehicles by private owners</td>
<td></td>
</tr>
<tr>
<td>1945-1960</td>
<td>Federal, state local roads</td>
<td>Reduce taxes</td>
</tr>
<tr>
<td></td>
<td>Local zoning</td>
<td>Begin subsidy of capital</td>
</tr>
<tr>
<td></td>
<td>Commercial tax base</td>
<td>(vehicles &amp; infrastructure)</td>
</tr>
<tr>
<td></td>
<td>Tax-exempt interest on homes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vehicles by private owners</td>
<td></td>
</tr>
<tr>
<td>1960-2004</td>
<td>Federal, state local roads</td>
<td>Local, Metro, State tax support</td>
</tr>
<tr>
<td></td>
<td>Local zoning</td>
<td>Federal capital - even operating</td>
</tr>
<tr>
<td></td>
<td>Commercial tax base</td>
<td>Externalities</td>
</tr>
<tr>
<td></td>
<td>Tax-exempt interest on homes</td>
<td>“Riders”</td>
</tr>
<tr>
<td></td>
<td>Vehicles by private owners</td>
<td></td>
</tr>
</tbody>
</table>
Externalities:
- Congestion
- Urban form
- Trip patterns
- Clean air
- Energy independence
- Elderly, disabled, students
- Low income

Which way do you want to go?
## COGNITIVE DISSONANCE

<table>
<thead>
<tr>
<th>Group</th>
<th>Dissonant Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean air</td>
<td>Diesel bus</td>
</tr>
<tr>
<td>Disabled</td>
<td>High floor, broken lifts</td>
</tr>
<tr>
<td>Poor people</td>
<td>Bus cuts &amp; fare hikes</td>
</tr>
<tr>
<td>Students</td>
<td>Separate buses</td>
</tr>
<tr>
<td>Workers</td>
<td>High wages, labor difficulty</td>
</tr>
<tr>
<td></td>
<td>Property tax</td>
</tr>
<tr>
<td></td>
<td>Sales tax</td>
</tr>
<tr>
<td></td>
<td>Gasoline tax</td>
</tr>
<tr>
<td></td>
<td>Parking tax</td>
</tr>
<tr>
<td></td>
<td>Remnant</td>
</tr>
</tbody>
</table>
INSTITUTIONAL STRUCTURE

(a) Lumpy distribution; remnant
(b) Representation in tax oversight
(c) Big Bang
(d) Growth means higher subsidy per ride
(e) Labor costs
(f) Fare recovery ratio
(g) Costs per vehicle hour
   vehicle mile
   seat mile
   passenger mile
   rider
(h) Feeder services
(i) Tyranny of small decisions
SNAPSHOT 1920s

No zoning yet
No big Federal and State highway model
No extensive auto ownership
No low density land use, suburban mortgage, tax exempt interest on local tax
But auto zoomed and transit declined
FINANCE

I. O&M most fundamental

Problem:

lumpiness of public transport
highways are more like peanut butter

Need for stable, multi-year government

A. Municipal Level
too small to encompass reasonable access needs

B. Metropolitan Level
no real governance
lumpiness of service
power of labor
FINANCE

Need for stable, multi-year government (cont’d)

C. State Level
   real government structure
   lumpiness of public transport
   need for coalition

D. Federal Level
   O&M provided under Nixon
   population/population density formula cap
   distribution based on:
      taxpayer effort
      cost
      ridership
      fare recovery ratio
      E&D requirements
Problem: high cost of

- vehicles
- light rail
- subway
- BRT

A. Municipal Level

- not affordable
- big lead time, cost for future benefit
- under-investment
CAPITAL FINANCE (cont'd)

B. Federal Level

Buy out private companies, renew fleet
HUD, 2/3 / 1/3
DOT, 80/20
Coalition (uneasy) with highways
  interstate transfer (1973)
  flexibility (1973)
  penny for transit (1987?)
  flexibility (1991)
B. **Federal Level** (cont’d)

MPO nexus of decision

Discretionary, new starts

- cost effectiveness
- contract authority
- full funding grant agreement
- PMO
- earmarks

Comparison with interstate highway

Vehicles, formulas
C. **State Level**
   varies

D. **Metropolitan Level**
   varies

E. **Referenda**

General Problem:
- lumpiness
- effectiveness vs. distribution
RE-AUTHORIZATION

A. Gas tax, capital budget, or gridlock

B. Highways plus transit
   plus disabled & elderly; O&M

C. Matching ratios:
   80-20
   50-50
   30-70

D. Desirability of uniform ratios between transit & highway

E. Open space acquisition, housing

F. Backlog idea

G. Highway O&M, like transit
METROPOLITAN LEVEL

A. Houston
  • suburban sidewalks

B. Massachusetts
  • suburban commuter rail
  • disabled & elderly
  • gas tax/sales tax

C. Chicago
  • CTA
  • METRA
  • PACE
  • Sales tax
D. Chicago 2020

- open space
- housing
- turnpike
- MPO
- highways
- registration fees
- user-side subsidies
- parking tax vs growing auto ownership and mode share, commuter rail growth at expense of fare hikes and service cuts in urban public transportation