LECTURE 26
1.201 Summary
Transitions in the World Of Transportation
Student Evaluations of 1.201

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Carl D Martland
SO WHERE HAVE WE BEEN IN 1.201?

I

◆ Concepts
  ◆ Transportation System Components
  ◆ 30 Key Points
  ◆ Critical Issues in Transportation
  ◆ Large-Scale Infrastructure: The Interstate
  ◆ The basics of demand modeling
  ◆ The basics of costing
  ◆ Networks
SO WHERE HAVE WE BEEN IN 1.201?
II

◆ Traveler Transportation
  ◆ Automobiles
  ◆ Urban Form and Transportation
  ◆ Urban Public Transportation
  ◆ Intercity Traveler Transportation
SO WHERE HAVE WE BEEN IN 1.201?

III

- Freight Transportation
  - Total Logistics Costs (TLC)
  - LOS for freight modes
  - Operating and Investment Issues
  - Comparison of Various Freight Modes
  - Intermodalism
SO WHERE HAVE WE BEEN IN 1.201?

IV

Themes

- Project Evaluation
- Privatization (Public Transportation)
- Technology/ITS
- Transportation/Environment/Sustainability - Mexico City Case
- Large Scale Infrastructure - Urban Rail - The NY City Subway System
- Public Policy - Highway Safety Case
SOME EMPHASIZED POINTS
(WE CAN'T DO EVERYTHING IN ONE SEMESTER!)

◆ Transportation as a complex system
◆ The Triplet of Technology/Systems/Institutions
◆ Level-of-Service (LOS)--freight and travelers--the importance of the customer
◆ The Cost/LOS trade-off - both straightforward and subtle
◆ Supply/Demand/Equilibrium
◆ The Vehicle-cycle
◆ Transportation as a component of a larger social-political-economic system--a force for good and otherwise
FRAMEWORKS

"REAL WORLD"

RESULTS/ DESIGNS

ABSTRACTION

MODELS

FRAMEWORKS

ANALYSIS

PROFESSIONAL JUDGMENT

COMMON SENSE

PRACTICAL SOLUTION
TRANSITIONS IN THE
WORLD OF TRANSPORTATION:
A SYSTEMS VIEW

Joseph M. Sussman
Transportation Quarterly
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Eno Transportation Foundation
Washington, DC, 2002
# SUMMARY OF TRANSITIONS

<table>
<thead>
<tr>
<th>FROM</th>
<th>TO</th>
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<tbody>
<tr>
<td>1. Capital Planning</td>
<td>Management and Operations Focus</td>
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<td>2. Long Timeframes</td>
<td>Real-time Control</td>
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<tr>
<td>3. Urban Scale Planning and Operations</td>
<td>Regional Scale Planning and Operations</td>
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<td>4. Emphasis on Mobility</td>
<td>Emphasis on Accessibility</td>
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<td></td>
<td>(the Transportation/Land-Use Connection)</td>
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<td>Customer Orientation</td>
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<td>5. “One Size Fits All” Service</td>
<td>Quality</td>
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<td>Pricing for Service</td>
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### SUMMARY OF TRANSITIONS (CONTINUED)

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<tr>
<td>6. Allocate Capacity by Queuing</td>
<td>Allocate Capacity by Pricing</td>
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<tr>
<td>7. Aggregate Methods for Demand Prediction</td>
<td>Disaggregate Methods for Demand Prediction</td>
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<tr>
<td>8. Episodic Data for Investment Planning</td>
<td>Dynamic Data for Investment Planning (and Operations)</td>
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<tr>
<td>10. Infrastructure Construction and Maintenance Providers</td>
<td>New High-Technology Players</td>
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### SUMMARY OF TRANSITIONS (CONTINUED)

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<tr>
<td>11. Static Organizations and Institutional Relationships</td>
<td>Dynamic Organizations and Institutional Relationships</td>
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<tr>
<td>12. Professional Emphasis on Design of Physical Infrastructure</td>
<td>Professional Emphasis on Transportation as a Complex, Large-Scale, Integrated, Open System (CLIOS)</td>
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<td>13. Economic Development</td>
<td>Sustainable Development</td>
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<td>14. Computers are &quot;Just a Tool&quot;</td>
<td>Ubiquitous Computing</td>
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<td>15. <strong>FROM</strong> Supply-Side Perspective</td>
<td><strong>TO</strong> Supply/Demand Equilibrium</td>
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<td><strong>AND ON TO</strong> Systems that Never Reach Equilibrium</td>
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SUMMARY OF TRANSITIONS
(CONTINUED)

**FROM**

16. Independent Conventional Infrastructure Projects
17. Vehicles and Infrastructure as Independent
18. Reducing Consequences of Crashes

**TO**

→ Linked Advanced Infrastructure Projects Requiring a System Architecture
→ Vehicles and Infrastructure as Electronically Linked
→ Crash Avoidance

19. **FROM** Modal Perspective **TO** Intermodal Perspective **AND ON TO** Supply Chain Management

20. Narrow Transportation Specialists → The New Transportation Professional
HOPE YOU ENJOYED 1.201
GOOD LUCK ON THE
FINAL!