1.212 Regional Operation Planning and Architecture (ROPA) Project

MEXICO CITY

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MAY 11, 2005
Outline

- Background
- Current Institutions
- Proposed Architecture
- Customer-Centric
- Cost/Benefits
Background

- Three Issues
  - Public Transportation
  - Congestion
  - Air Pollution

- In a complex institutional environment
Public Transportation

- Represents 69% of all motorized trips
- Half of those trips are in *colectivos* ("fixed route collective taxis")
- Metro has lost ridership
- Buses have lost ridership
- MCMA is highly dependant on *colectivos*
The economic and institutional model of *colectivos* is problematic.

- Competition *in* the market results in aggressive driving.
- Loose planning and operational control results in over-supply in some corridors and lack of service in others.
Congestion is a big concern

- Authorities have built some physical capacity. “We can’t Build Our Way out of Congestion”
- And implemented a demand management program: “Hoy No Circula”, but it resulted in more old vehicles and VMTs.
Background

- Air pollution
  - Transportation is a major source of pollution.
    - Congestion
    - Old fleet
    - Lack of maintenance
    - Poor fuel quality
A typical day
Complex institutional environment

- MCMA is not a unified political jurisdiction
  - Distrito Federal (DF)
  - Estado de Mexico (EM)
  - Estado de Hidalgo
- A total of 59 municipalities and 16 delegations
Background
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MCMA Transportation

- MCMA composed of 10,437 km of roads
  - 89% in the DF
  - 11% in the EM
- Limited Institutional framework
  - Difficult to plan and manage transportation
- Fragmented transportation system
  - “Transportation services are provided, regulated, and operated by different institutions with different goals and organizational structures.”
Metropolitan/Federal

- SCT: Ministry of Communications and Transports
  - Federal transportation planning institution
- COMETRAVI: Transportation and Traffic Metropolitan Commission
  - “Virtual organization” – representatives from various organizations in the EM and DF
EM Organizations

- EM-SCT: Secretariat of Transportation
  - In charge of transportation planning
- SC-EM: Secretary of Communications
  - Management and regulation of private transportation
- ST-EM: Secretary of Transport
  - Responsible for management and development of primary road infrastructure and regulation of local communications
- SCM: Metropolitan Coordination Secretariat
  - To promote metropolitan agenda
DF Organizations

- SETRAVI: Secretariat of Transportation
  - Provides major planning guidelines
- SSP: Secretariat of Public Security
  - Responsible for fostering safe and orderly movement of passengers and vehicles
  - Optimize traffic control
  - Police, Traffic Enforcement
Challenges

- While more than half the trips are made between the DF and the EM:
  - Different organizations, political parties running transportation in the DF and EM
  - Lack of communication between the different organizations
  - Different set of laws in the DF and EM
DF/EM Information/Resource Flows

Mexico City

DF/EM Information/Resource Flows

- Smart card
- BRT
- Metro
- Trolley
- Intelligent traffic signals
- VMS
- Emergency response vehicles
- CETRAM
- Public buses
- Work zone management
- Road advisory webpage
- Road advisory radio
- Taxi
- Private cars
- Emergency response vehicles
- SEC
- Security
- Work zone management
- Public Works
- Public Works
- Public Works
- Colectivos
- Colectivos
- Colectivos
- Taxi
- Private cars

Institutions

Operations

Transportation modal agencies or organizations

Massachusetts Institute of Technology

ITS
DF Information/Resource Flows

- Links within jurisdiction
- Resource flows
  - SSP – Limited ITS
  - Some links with private sector
Levels of Authority

- Well established in planning!
  - DF – SETRAVI
  - EM – ST-EM
- Metro/Federal
  - COMETRAVI – advisory
  - SCT – Sets Standards
Regional/Organizational Capacities

- Limited, few resources
  - COMETRAVI (virtual)
- Regional coordination
  - A threat to local officials
- Unequal Distribution of Resources
  - EM - 45% pop., 17% funding
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New Organizations
- Mexico City Metropolitan Operations Organization (MCMOO)
- Farebox Collection Company

Changes to Existing Agencies
- Increase capacity in EM
- Coordinate through MCMOO
- DF and EM agencies establish relations with counterpart organization
New ROPA

Farebox Collection Company
- Coordinate planning, ops
  “planning for operations”

COMETRAVI
- Planning for DF
- Operations for DF
- DF congestion changing

SC-EM
- Planning for Mass Transit
- BRT
- Coordinate with DF transit agencies

ST-EM
- Planning in EM
- Operations in the EM
  - ATMS
  - Incident detection

MCMOO

EM

Metropolitan

DF

SETRAVI
- Planning for DF
- Operations for DF
- DF congestion changing

SSP
- Deploy ITS in DF
- VMS info available to CETRAMS
- Collision/incident detection
Mexico City Metropolitan Operations Organization

- Similar to TRANSCOM in acting as coordination forum
- Developer of regional standards
  - ITS and interoperability
  - Smart Card
- Data Manager
  - Backup for local agencies
  - Platform for future ATIS services
- Regulator of colectivos
MCMOO as Colectivo Regulator

- Similar to Bogotá, Colombia
- Formalize routes and put out for bid
- New incentive - Pay on basis of routes, not passengers
- Mandate technological change – LEVs and GPS
- Fare collection using smart card system
Farebox Collection Company

- Created with the agreement of the MCMOO and colectivos
- Independent of government and colectivos
- Distributes collected fares
- Provides funding stream for MCMOO
Changes to Existing Agencies

- ST-EM and SSP manage operations, incident response, and ITS deployment in EM, DF respectively
- SETRAVI (DF) institutes congestion charging
- Hoy No Circula eliminated
- SC-EM works with DF on BRT and other public transportation initiatives
Other Organizational Changes

- SOS (DF) sends construction schedules to SSP (DF)
- SCT (Fed) and COMETRAVI (DF) work closely with MCMOO
- SCM (EM) integrated into ST-EM
  - “Metropolitan Agenda” mission can be carried out by enlarged ST-EM
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Customer-Centric Approach

- Greater use of Information Systems
  - VMS at Intermodal Centers
  - Potential ATIS services
- Enhanced safety – Incident Detection
- Colectivo Enhancements
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Benefits – New ROPA

- More communication
  - EM public trans, DF trans agencies
  - Public Works, Transportation Operations – DF

- Greater system interoperability
  - Uniform ITS standards - MCMOO

- This leads to greater service coverage, smoother traffic flows, lower emissions
Potential Weaknesses

- Hiring necessary expertise
- Sustained commitment
- Funding of ITS
- Generating public interest

Overhead to coordinate agencies
To Overcome Drawbacks

- Success in phases – Smart Card, Congested Pricing
- Customer-Centric Approach
  - Balanced Scorecard – assess customer service
  - Independent surveys
Conclusion

- MCMOO Encourages Regional Solution
  - Needed for ITS
- Customer-Oriented
- Long Term Benefits
  - Reduced Congestion
  - Safer Transportation
  - Less Pollution