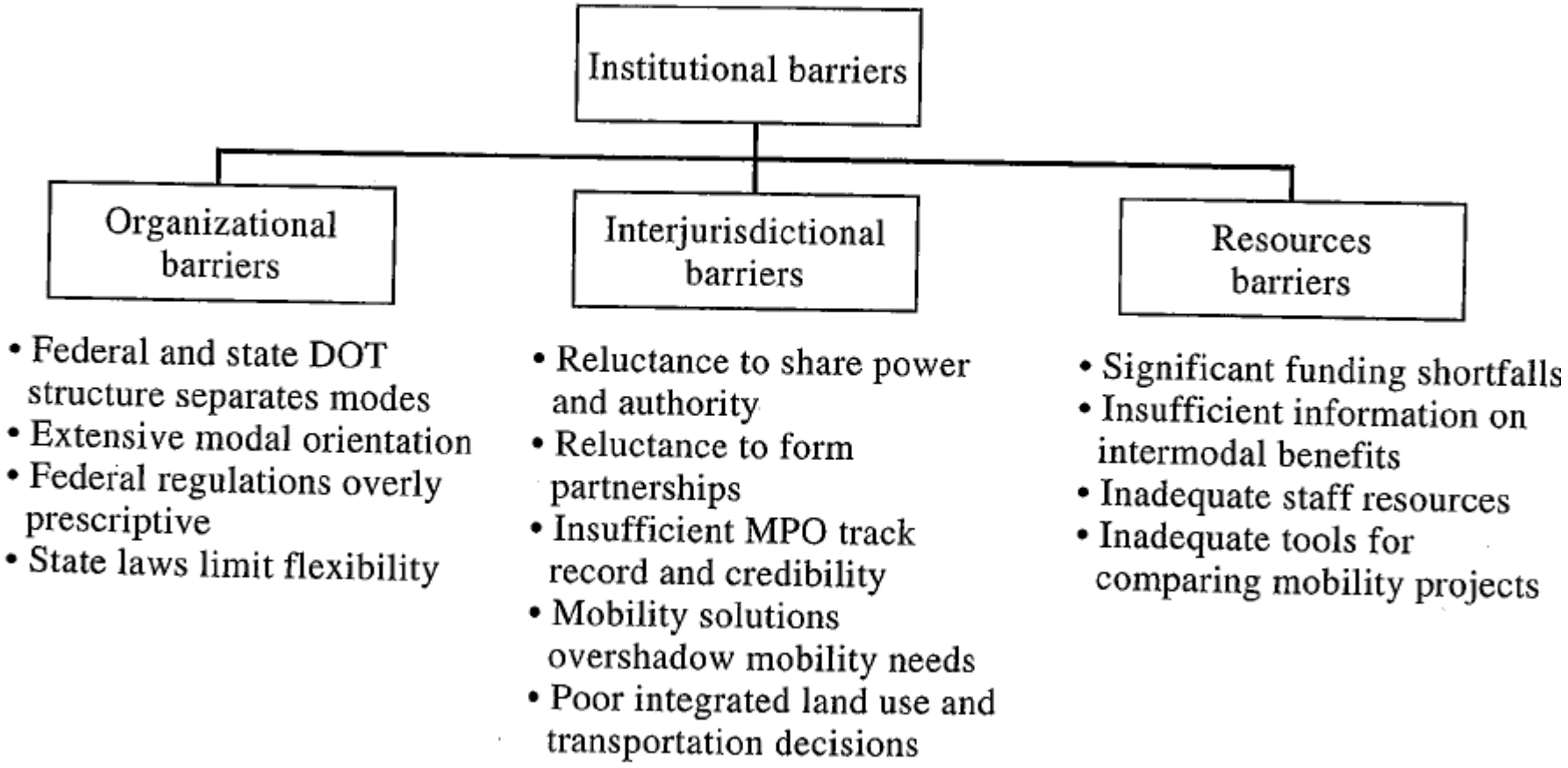
Chapter 2
Transportation planning and decision making

2.1 Institutional framework for transportation decision making

The difficulties in project implementation are not technical, but rather “institutional”.

多式联运规划过程中的体制壁垒



- **排放标准部委文件与国十条不一致**

国务院（2013）

《大气污染防治行动计划》（简称：空气“国十条”）

自2017年起，新生产的低速货车执行与轻型载货车同等的节能与排放标准。**（国四排放标准）**

部委（2014）

《加强“车油路”统筹加快推进机动车污染综合防治方案》

2017年起，新生产的低速货车实施第三阶段轻型载货柴油车排放标准。**（国三排放标准）**

- **汽车淘汰年限部门规定不一致**

环保部、发改委等六部（2013）

《机动车强制报废标准规定》

大型出租客运汽车使用年限**12年**；租赁载客汽车使用年限**15年**

商务部（2014）

《2014年黄标车及老旧车淘汰工作实施方案的通知》

到2015年，强制淘汰2005年以前注册运营的“黄标车”。

各种交通方式没有实现“跨界融合”

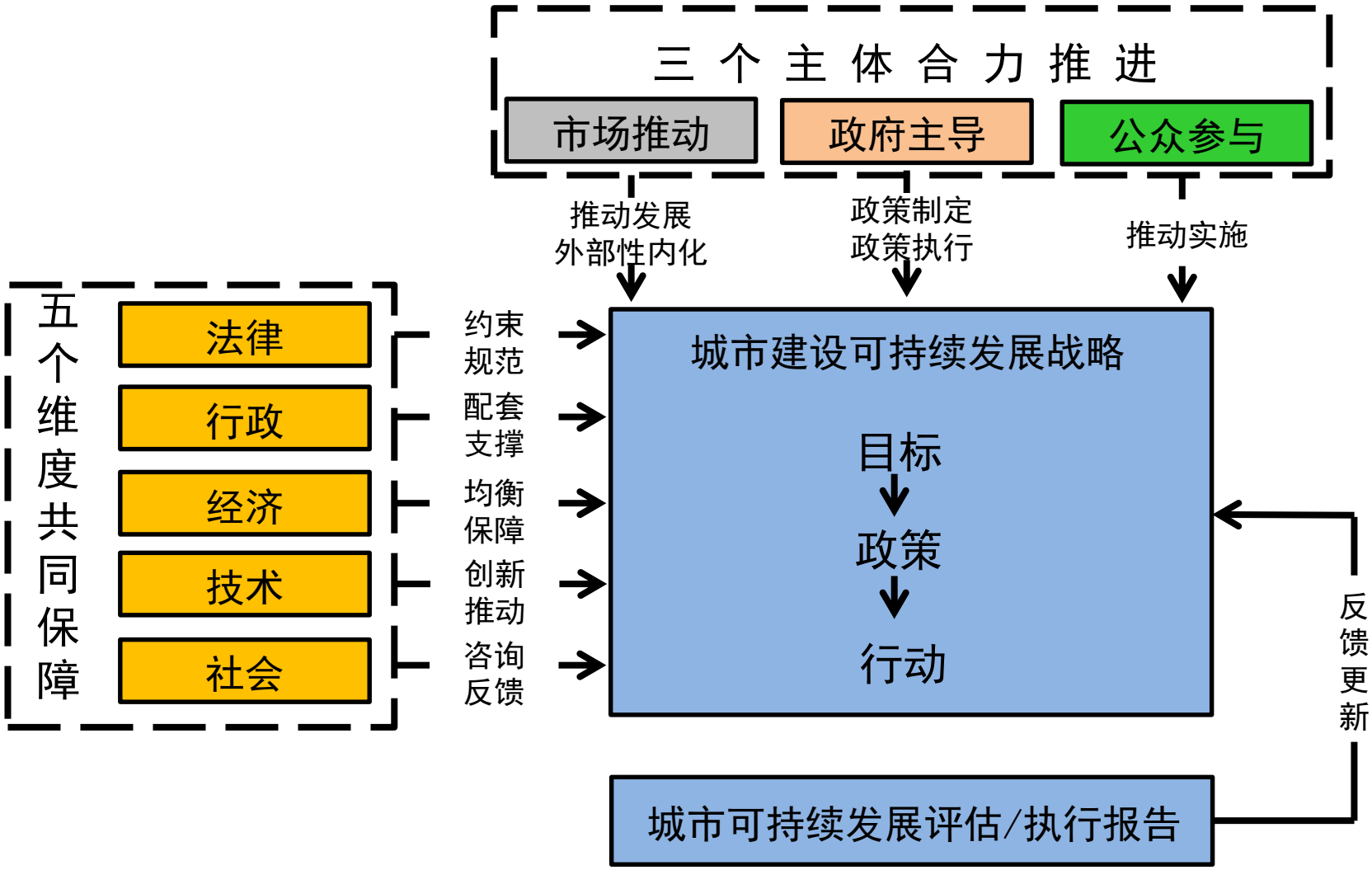
- 以**轨道交通**为例，由于系统制式不兼容、管理和规划主体不统一等因素，**城市轨道交通与铁路缺乏有效融合**，各种轨道交通系统之间难以优势互补和有机衔接，难以充分整合网络通道资源。衔接界面多家经营主体彰显各自的领地意识，实行领地割据，而置乘客利益于不顾。

- 以**北京西站**为例，以铁路站房、进站系统等为主的地上部分和以出站系统为主的整个西站，分别隶属于北京铁路局和北京市政府两个不同的管理主体，在换乘衔接、运力配置以及面向乘客的服务信息等方面均缺乏有机整合，各管理主体之间基本保持独立运营。

介于城市与区域两大系统之间的空间圈层(30-70-120km)成为系统服务盲区

- 从**都市圈**层面看，城市(中心城)轨道交通系统由地铁独占鳌头，然而，近年来随着城市建成区不断向外拓展，居民通勤距离不断增长。以北京市为例，以燕郊为代表的环京城镇已经融入北京都市圈发展范畴，但30~70km圈层依然缺乏相应的快速轨道交通网络的支撑。
- 从**城市群**层面看，京津冀城市群内各城市之间的联系主要通过既有国家铁路干线(普速铁路、高速铁路等)承担，在车站设置、发车频率、服务水平上难以满足城市间频繁交流和高效出行的需要，城际铁路建设亟待加快。
- 此外，轨道交通系统制式选择随意、服务定位与市场需求背离、通道资源错配等问题乱象丛生。显然，这种二元分隔自成一统的割据和失衡的结构体系，不仅无法为大都市圈提供高效的出行服务，更难以实现资源整合共享、系统互联互通，无法满足城市群的发育和发展需要。

三主体五维度体系框架



- 强化“政府主导-市场推动-公众参与”三个主题协同机制
- 完善“法律-行政-经济-技术-社会”五个维度保障机制
- 建立“目标-行动-反馈”体系，明确行动指向，提高行动效率

前规划、中监控、后评价

- **《2020年的东京》**

  规划设计 → 规划实施→ 落实反馈→ 规划更新

  规划中监控+规划后评价相结合的评价体系

  政府部门、城市居民共建反馈机制

- **《英国可持续发展战略》以绿色低碳政府为例：**

  逐年提交2011年到2015年行动的跟踪评估年度报告

  以**年度报告为基础修订**形成绿色低碳政府机构行动2016-2020

如：纽约减碳节能

纽约城市可持续发展规划中对于低碳这一总目标设置了4项分目标，再根据分目标制定政策，再确定低碳政策的主要执行机构

总目标（减碳48.7百万吨）

	抑制蔓延（减碳15.6百万吨）	提高能源清洁度（减碳10.6百万吨）	建筑节能（减碳16.4百万吨）	可持续发展交通（减碳6.1百万吨）
分目标				
政策	增加可支付性住房 增加公园可达性和品质 增加大运量公交 棕地整治 增加娱乐休闲水域 确保可靠的能源和水源	替换效率低的能源厂 发展情节性分布式发电系统 促进可循环利用的发电厂	提高现有建筑的能效 发展高能效建筑 促进城市建筑和能源法规的绿色化 教育培训	降低私家车使用率 提高交通工具的燃烧效率 降低燃料的二氧化碳排放浓度
主要执行机构	➢ 纽约市住宅保护和发展局 ➢ 纽约市规划管理局 ➢ 纽约市长期规划和可持续发展市长办公室 ➢ 公园休闲管理局 ➢ 大都市交通署 ➢ 纽约市交通局 ➢ 纽约市环境修复办公室 ➢ 纽约市环境保护局 ➢ 纽约市政服务局	➢ 纽约市能源规划委员会 ➢ 纽约州市政服务委员会 ➢ 纽约市经济开发合作机构 ➢ 纽约市电力公司 ➢ 纽约市财政局 ➢ 纽约市长期规划和可持续发展市长办公室 ➢ 教育社团 ➢ 纽约市卫生局 ➢ 纽约市环境保护局 ➢ 州立法机构	➢ 纽约市经济开发合作机构 ➢ 纽约市长期规划和可持续发展市长办公室 ➢ 纽约市能源规划委员会 ➢ 纽约州能源研发委员会 ➢ 纽约市建设局 ➢ 纽约州市政服务委员会 ➢ 纽约市电力公司 ➢ 纽约市教育局 ➢ 纽约市学校建设委员会 ➢ 纽约城市大学 ➢ 州环境保护署	➢ 纽约市长期规划和可持续发展市长办公室 ➢ 大都市交通署 ➢ 纽约和新泽西港务署 ➢ 纽约市财政局 ➢ 纽约市交通局 ➢ 纽约市交通署 ➢ 纽约市的士及其他车辆委员会 ➢ 纽约州能源研究和发展委员会 ➢ 纽约市环境保护局 ➢ 纽约市教育局

2.1 Institutional framework for transportation decision making

- **Changing composition of the institutional environment**

In the United States, federal regulations require each urbanized area over 50,000 population to have a **metropolitan planning organization** (MPO) responsible for transportation planning.

Participants in the planning process can include a variety of **private sector organizations** and **community groups**, include environmental groups, community associations, bicycle/walking advocates, business associations……

- **2013年3月10日，国务院发布《国务院机构改革和职能转变方案》，开启新一轮大部制改革。**

将**铁道部**拟定铁路发展规划和政策的行政职责划入交通运输部。交通运输部统筹规划铁路、公路、水路、民航发展，加快推进综合交通运输体系建设。

组建**国家铁路局**，由交通运输部管理，承担铁道部的其他行政职责，负责拟订铁路技术标准，监督管理铁路安全生产、运输服务质量和铁路工程质量等。

组建**中国铁路总公司**，承担铁道部的企业职责，实现政企分开。

中华人民共和国自然资源部

Ministry of Natural Resources of the People's Republic of China

- 2018年3月，设立中华人民共和国自然资源部，为国务院组成部门。

将国土资源部的职责，国家发展和改革委员会的组织编制主体功能区规划职责，住房和城乡建设部的城乡规划管理职责，水利部的水资源调查和确权登记管理职责，农业部的草原资源调查和确权登记管理职责，国家林业局的森林、湿地等资源调查和确权登记管理职责，国家海洋局的职责，国家测绘地理信息局的职责整合，组建自然资源部。

2.1 Institutional framework for transportation decision making

- **Increasing linkage to other policy goals**

Transportation provides opportunities for social, economic, and community activities, policy makers have turned to the transportation sector as a means of achieving **a variety of societal goals**.

Transportation and air-quality planning

Transportation and growth management, welfare, energy, and other environmental policies.

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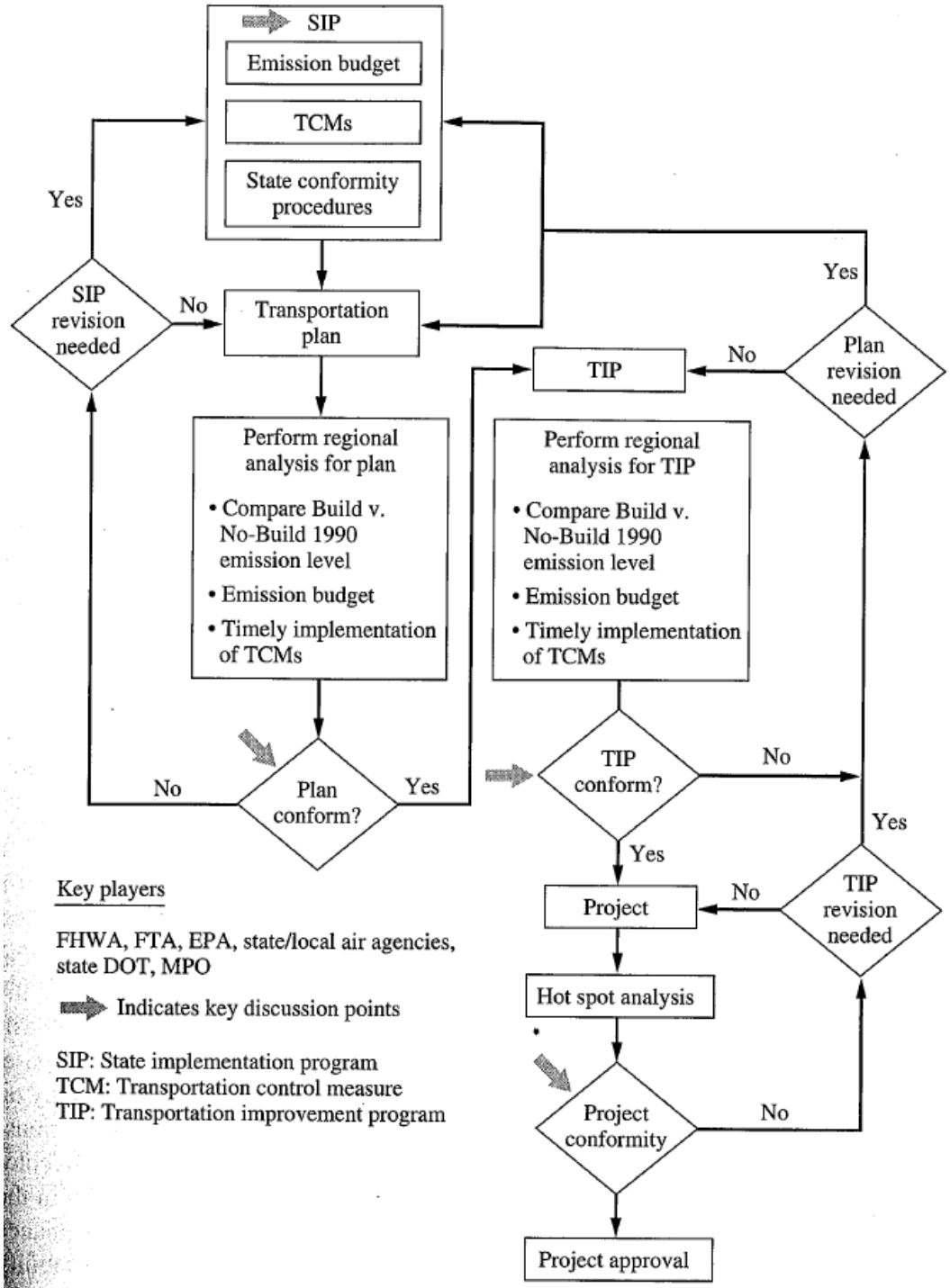
空气质量达标的交通规划程序



2.1 Institutional framework for transportation decision making

- **The mix of transportation strategies**

Demand management, supply management and land use management

The mixed strategies leads to the participation in the planning process of **a variety of groups**.

2.1 Institutional framework for transportation decision making

- **Evolving financial structure for transportation projects**

Mechanisms to **finance the transportation system** have been in place for a long time.

Ever since the1950s, the most important source of highway finance has been the **motor fuel tax**.

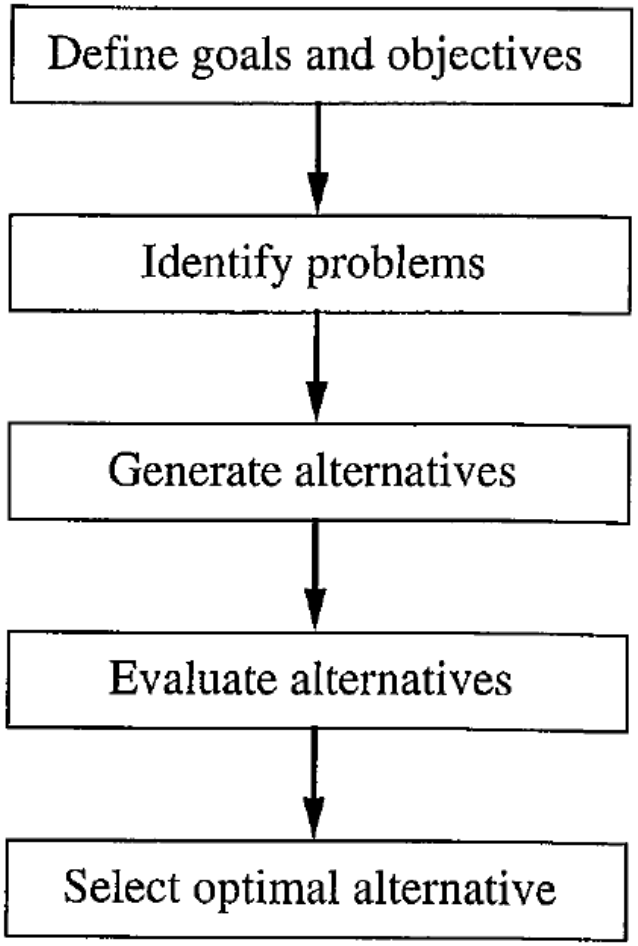
Innovation in three areas:

(1) New revenue sources

(2) New roles for the public and private sectors

(3) Encourage private investment

2.2 An evolving perspective on the planning and decision-making process



理性化交通规划方法

The rational approach toward transportation planning

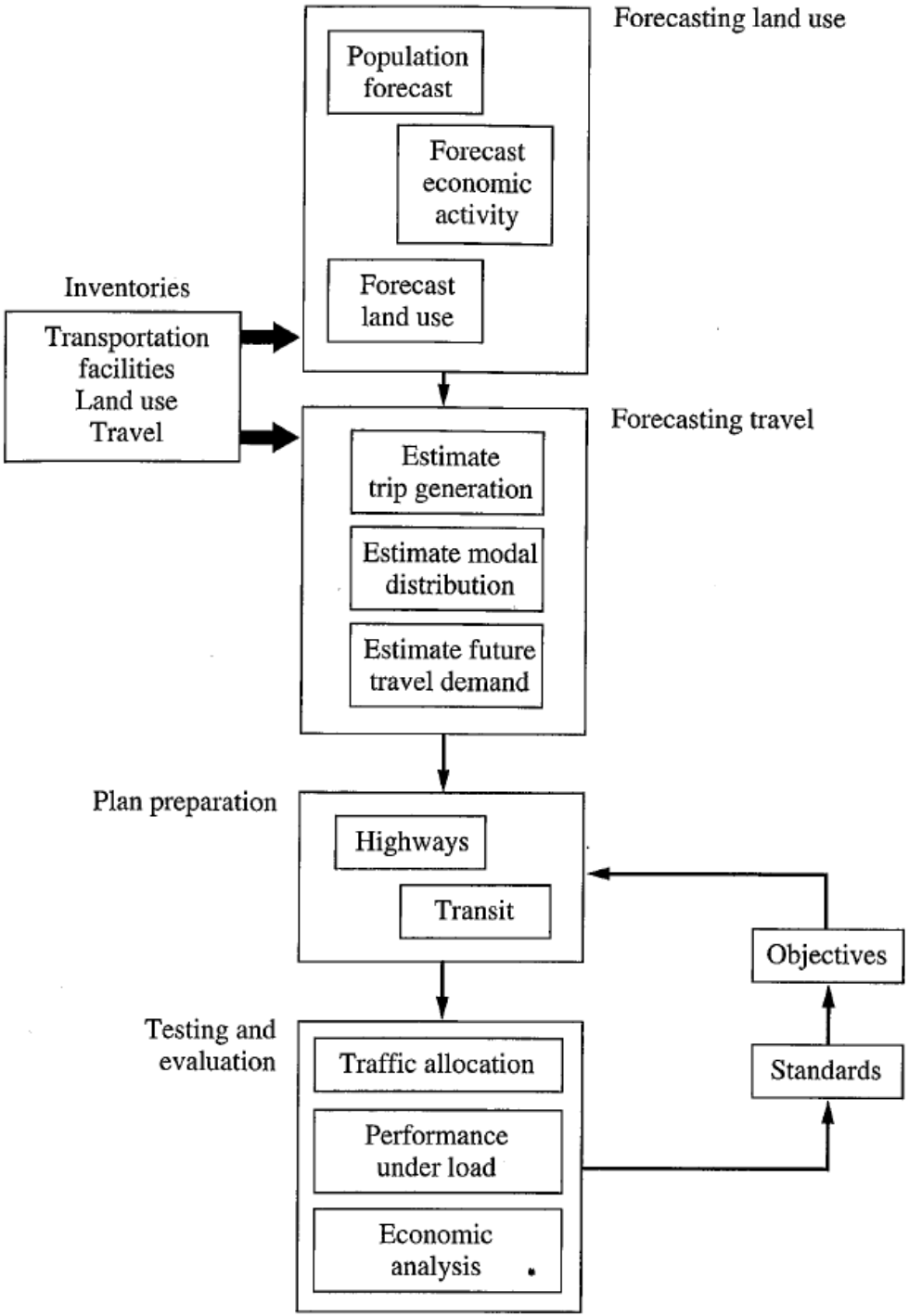
- The most important characteristic of the Chicago plan that reflects the rational nature of its approach was the selection of **a single criterion of choice-lowest transportation cost**.

Table 2.3 Evaluation matrix for the transportation alternatives in the 1962 Chicago plan

Characteristics	Plan A	B	K	L–3*	I	J
Miles of proposed routes	288	327	466	520	681	968
Cost of completion in millions (after 1960 and including arterial streets)	$907	$1,274	$1,797	$2,007	$2,457	$3,180
Average weekday vehicle miles of assigned travel to arterial and express facilities for 1980 (in thousands)						
Arterials	45,036	41,963	34,380	33,149	31,531	24,245
Expressways	22,878	25,191	33,320	34,414	35,061	41,574
Total	67,914	67,154	67,700	67,563	66,592	65,819
Daily vehicle equivalent hours of travel (in thousands)	2,420	2,283	2,049	1,990	1,937	1,990
Estimated annual traffic fatalities	781	698	638	626	606	638
Estimated daily traffic accidents	504	450	378	359	346	416
Costs converted to cents per vehicle mile						
Travel (accident, time, and operating)	9.10	8.71	8.11	7.96	7.90	8.04
Interest/principal on construction	0.43	0.62	0.86	0.96	1.20	1.57
Total	9.53	9.33	8.97	8.92	9.10	9.61

*Recommended plan

1962年芝加哥交通规划方案评估矩阵



芝加哥1962年交通规划流程

2.2 An evolving perspective on the planning and decision-making process

- The planning of transportation systems is as much **a political process** as it is a **technical one**.
- To some, understanding the decision –making process meant **understanding politics**.

2.3 Conceptual models of decision making

- **Five major conceptual models**:

(1) The rational actor approach
(2) The satisficing approach
(3) The incremental approach
(4) The organizational process approach
(5) The political bargaining approach

These models are based on the principles and concepts of two major disciplines—**political science** and **management science**.

(1)The rational actor approach

- This model traditionally assumes a **rational**, **completely informed set of decision makers** whose decision process is based on maximizing the attainment of set of goals and objectives.

- Modified versions of the rational model have **relaxed some of the more rigid requirements** of complete information and have developed a model of rational decision making that recognizes **the limitations of decision makers' capability to digest information**.

(1)The rational actor approach

An example: environmental assessment process established in the United States.

The final decision of the preferred alternative rests with the governor of the state.

This model requires the **most structured** and **data-intensive planning effort** of the five models.

Planning process:

Identify all feasible alternatives,

Compare these alternatives along some set of evaluation criteria,

Rank them in order of preference with respect to defined goals and objectives.

(2)The satisficing approach

Critiques of the rational actor approach:

Comprehensive knowledge and the selection of the “optimal” alternative.

In the satisficing model of decision making, decision makers choose alternatives that satisfy **some minimum level of acceptability** or that **induce the least harm or disturbance** while conveying some benefit.

Find an acceptable one after only moderate search.

Rationality is limited by the resources and ability of the decision maker to acquire and process information.

(2)The satisficing approach

This model of decision making has several important characteristics:

- Alternatives and consequences of action are discovered sequentially through the search process;
- Each action deals with a restricted rang of situations and consequences;
- Decision making is goal oriented and adaptive;
- Decision makers will define a set of actions that can be implemented in recurrent situations.

(2)The satisficing approach

The satisficing model is still based on rational choice, information on the impacts of alternatives must still be obtained although the **evaluation criteria can be limited to a small set** that are most relevant to the decision makers.

Attainment of specific goals and objectives still drives the planning process.

(3)The incremental approach

The incremental model presents a **limited** strategic approach; is remedial in that it "**problem solves**" .

It is described as **remedial**, geared more to the alleviation of present, concrete, social imperfections than to the promotion of future social goals.

For example: an urban corridor experiences increased congestion. Traffic management policies can be implemented :

Parking and stopping regulations;

Exclusive bus lanes;

A rail facility.

(4)The organizational process approach

This model recognizes the fact that most individuals belong to organizations and that decision making is therefore influenced by the **organization**, channels of **communication**, and **standard operating procedures**.

The approach is particularly **well suited to transportation** because transportation program and project implementation are guided by standard operating procedures.

The role of planning in this model is to **provide the necessary information on alternatives to organization decision makers**.

(5)The political bargaining approach

This view of decision making recognizes that the large number of actors involved in a decision often have **diverse goals, values, and interests**, which **creates conflict and a subsequent need for bargaining**.

The outcome of this bargaining process might **not be "optimal" in a technical sense**.

The bargaining represents a degree of **power sharing among diverse interests** that often leads to stalemate.

(5)The political bargaining approach

The role of planning in a political bargaining process is **much broader** than that for the other decision-making models.

The planning process should be designed **to provide as much information as possible on the alternatives** being proposed by interest groups, which means that the analysis approach should be **flexible** enough to respond quickly to requests for information on alternatives that surface during negotiations.

2.5 Characteristics of a decision-oriented planning process

A transportation planning process should address the following:

(1) Establish the future context

(2) Respond to different scales of analysis

(3) Expand scope of the problem definition

(4) Maintain flexibility in analysis

(5) Provide feedback and continuity over time

(6) Relate to the programming and budgeting process

(7) Provide opportunities for public involvement

2.6 Development of a decision-oriented transportation planning approach

Four major stages of a decision-making process:

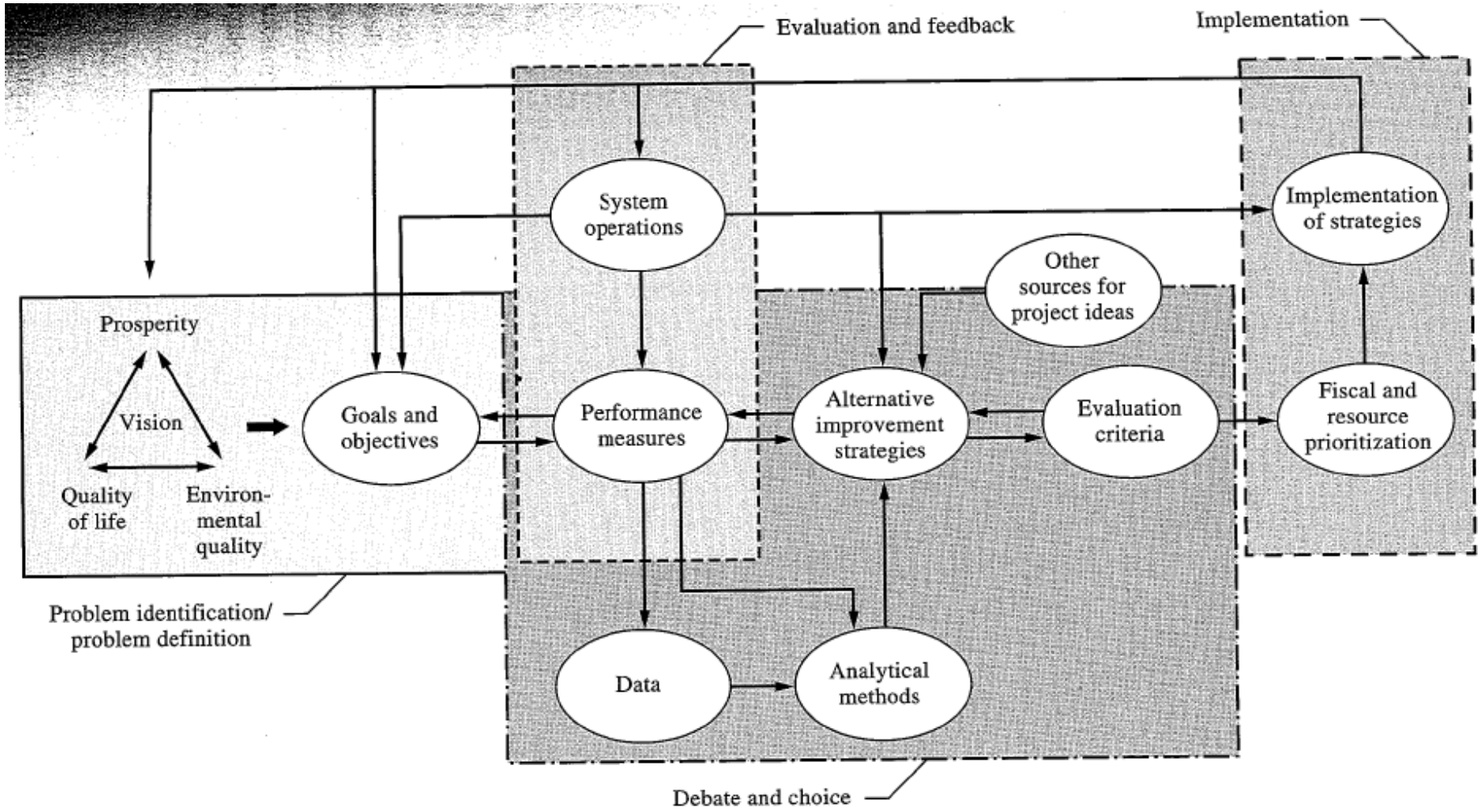
(1) Problem identification and/or definition

(2) Debate and choice

(3) Implementation

(4) Evaluation and feedback

交通规划与决策各阶段的联系



2.6 Development of a decision-oriented transportation planning approach

There are **significant differences** between the planning process shown and more traditional constructs.

(1) Planning shown encompasses **a broad set of activities**.

(2) The planning process begins with a **vision** of what a community desires for the future.

(3) Performance measures. are shown as a central concept.

(4) Different types of **data** are used for planning

(5) The **periodic feedback** provided to the original vision definition, goals statement, and identification of performance measures.