

High-Speed Rail Market Selection Process for East Japan Railway Company

Patton Doyle (MST '16), Joanna Moody (MST '16), Maite Peña-Alcaraz (ESD Ph.D. '15), and Prof. Joseph Sussman



This research was performed as part of an ongoing project between East Japan Railway Company and the MIT Regional Transportation Planning and High Speed Rail research group. This builds off of previous work in the group, with particular contributions by Ryan Westrom (MST '14), Andrés F. Archila (MST '13), S. Joel Carlson (MST/ESD '14), and Naomi Stein (MST/MCP '13).



Overview

The JR East Market Selection Process provides a regularized structure for information gathering and decision-making. The process will produce a detailed description and evaluation of each market available to JR East. This evaluation will allow JR East to compare each market and determine the appropriate course of action.

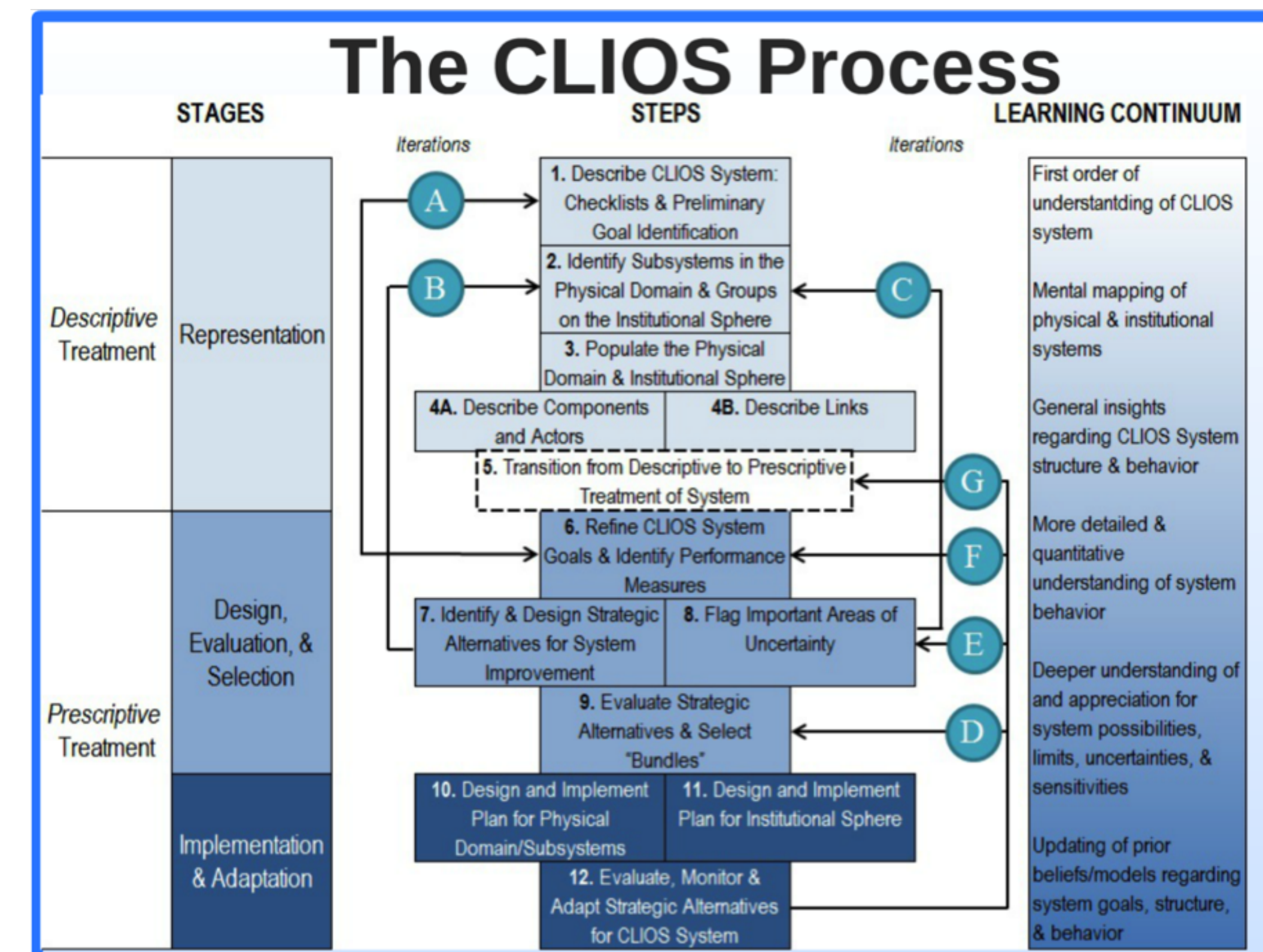
Figure 1: Conceptual steps in the overall JR East Market Selection Process.



The CLIOS Process

The CLIOS Process gives JR East deep knowledge about each market. With this knowledge, JR East will have an understanding of the technical requirements of the HSR market as well as its institutional structure. This knowledge enables JR East to be a more sophisticated bidder if it chooses to pursue the market. In addition, the CLIOS Process demonstrates to the stakeholders of the market that JR East has a serious interest. Thus, the CLIOS Process provides an illuminating analysis for JR East and a marketing tool as well.

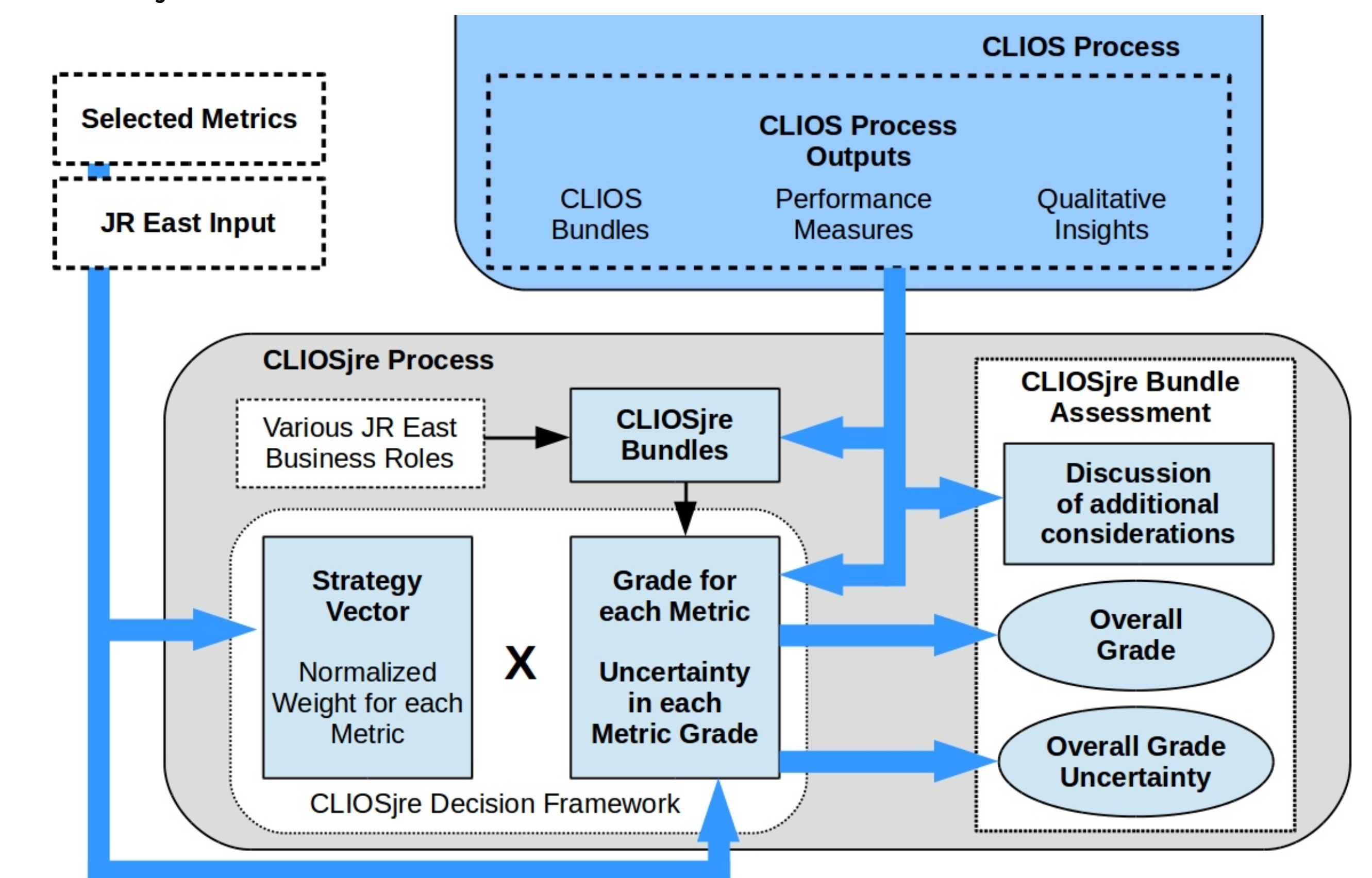
Figure 2: Flowchart of the first half of the JR East Market Selection Process: The CLIOS Process



The CLIOSjre Process

The CLIOSjre Process provides a consistent comparative framework for determining which market(s) best fit JR East's business strategy. The process is designed to handle uncertainty within each market as well as uncertainty in JR East's priorities. Further, the CLIOSjre Process is designed to be transparent and clear in order to facilitate discussion within the company.

Figure 3: Flowchart of the second half of the JR East Market Selection Process: The CLIOSjre Process.



Case Study: Northeast Corridor HSR

Figure 4: The full CLIOS Representation of the NEC HSR system, including physical domain and institutional sphere

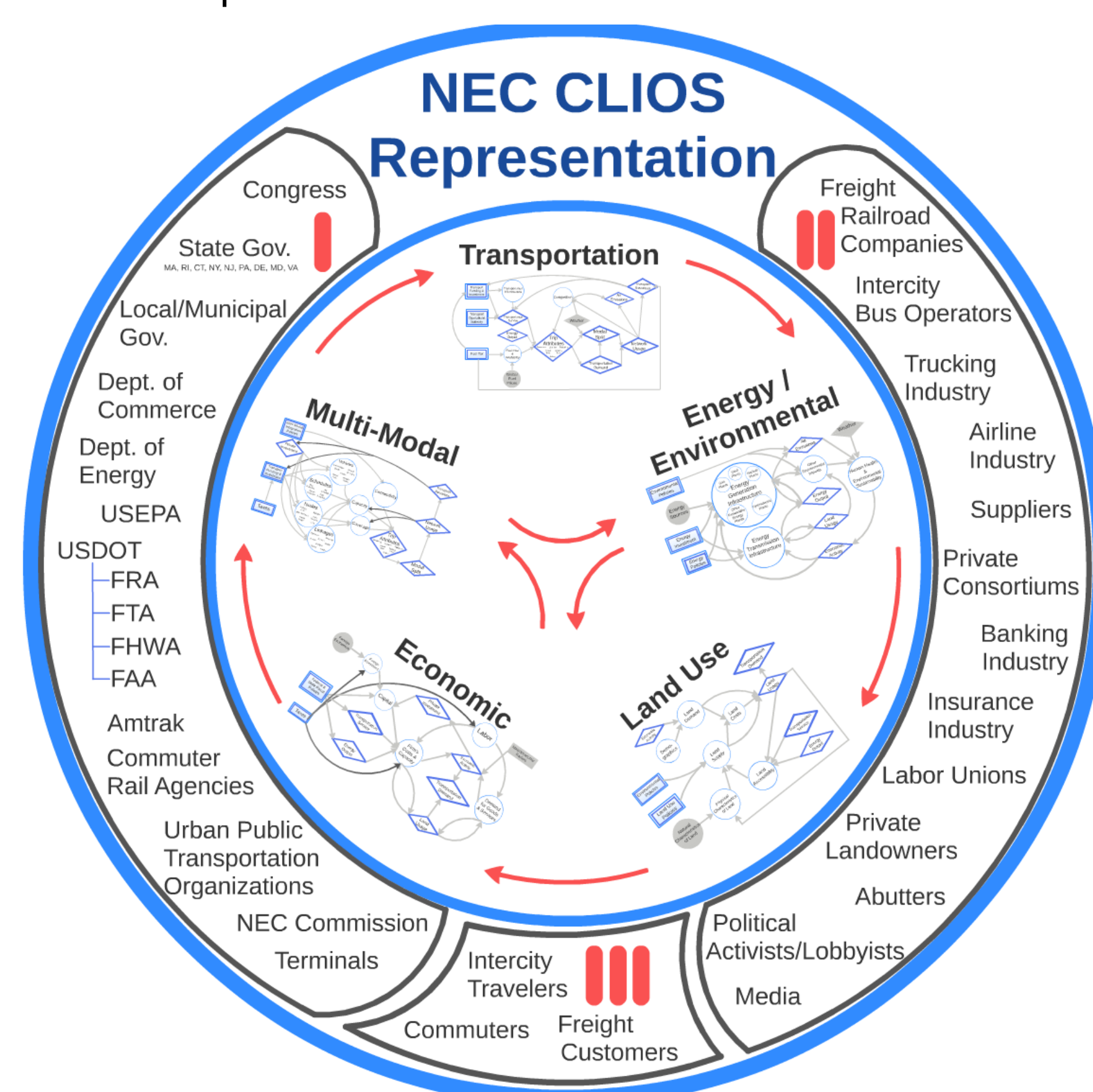


Table 1: CLIOS Process Bundles of Strategic Alternatives identified for the NEC.

Physical System #	Configuration	Organizational Structure	Funding Mechanisms
1	Incremental HSR Existing Alignment - Shared Track	Vertically Integrated Amtrak Operations	Public Infrastructure Public Operations
2	Incremental HSR Existing Alignment - Shared Track	Vertically Separated Amtrak Operations	Public Infrastructure PPP Operations
3	Piecewise International Quality HSR New Alignment - Dedicated Track	Vertically Integrated Non-Amtrak Operator	Public Infrastructure Private Operations
4	Piecewise International Quality HSR Existing Alignment - Shared Track	Vertically Separated Competing Operators	PPP Infrastructure PPP Operations
5	All-Over International Quality HSR New Alignment - Shared Track	Vertically Integrated Amtrak Operations	PPP Infrastructure Public Operations
6	All-Over International Quality HSR New Alignment - Dedicated Track	Vertically Separated Competing Operators	PPP Infrastructure Private Operations

Figure 5: Example output of the CLIOSjre Process corresponding to the NEC CLIOS Bundle #6.

