Rapid Alignment Initiated Delivery
A Project Delivery Theory to Enhance Project Outcomes
THE DEMATTEIS ORGANIZATIONS

Building Tomorrow Today

Est. 1918
The DeMatteis Organizations

Owner/Developer
Building Construction
Property Management
Introduction – New York University

NYU Tandon School of Engineering
Department of Civil and Urban Engineering
Center for Construction Management Innovation (CCMI)
Introduction

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PhD Candidate – Civil Engineering/Construction Management
Student Faculty Advisor – AGC Student Chapter
Introduction

Research Exploration
Best Value Alignment Process for Public Works Construction in New York State
Research Partners

Research performed in conjunction with the

• State University Construction Fund (SUCF)

• United States Tennis Association
  National Tennis Center (USTA-NTC)
The Research Problem

Defining the Initial Problem – Is There a Better Way?

• Improving “Public Sector” Capital Construction Project Outcomes in New York State.

• How do we facilitate a “Best Value” Outcome?
The Research Problem
Primary Delivery Team Stakeholder Alignment
Our Research is about their Relationships and Perceptions

This is a *People Business*
The Research Problem
Delivery Team Alignment

• “Alignment is the process of incorporating the priorities and interests into a uniform set of project objectives that meet the business requirements of the facility.” (Construction Industry Institute)

• Individual Stakeholders involved in Capital Construction Projects have differing priorities and interests which may not align with the overall Project Team Objectives resulting in less than optimal Project Outcomes.
The Research Problem

• A key hypothesis guiding the research is that a “best value outcome” is not possible for the New York State public sector project without sufficient stakeholder alignment and team collaboration across multiple levels and dimensions of the delivery process.
Common Project Delivery Methods

- Design – Bid – Build (DBB)
- Construction Management @ Risk (CMR)
- Design Build (DB)
- Integrated Project Delivery (IPD)

Viewed as Systems or Processes with Varying Levels of Project Team Integration and Collaboration
Level of Integration and Collaboration

- DBB Sealed Bid
- DBB Negotiated Bid
- CM as Agent
- CM at-Risk
- Design Build
- Integrated Project Delivery
Private Sector vs New York Public Sector
Project Delivery Features

- Private Sector - Contractual Freedom - Choice of Project Delivery Method
- Private Sector - Free to Choose their Design and Construction Team
- Private Sector - Free to Assign Varying Levels of Risk
- Private Sector - Free to Negotiate and to Award Vendors of Choice
- Public Sector – Mandated Separation of Design and Construction Activities
- Public Sector – Most common form of Project Delivery is DBB
- Public Sector - Sealed Lowest Bid Contract Award
- Public Sector - Legal Restrictions at the Federal, State and Local Levels
- Public Sector - Project Team Participants are Unknown until the Construction Phase of the Work
Design - Bid - Build
Project Delivery in New York State

Mandated Separation of Design and Construction

• **Historically** we view Public Sector Project Delivery in New York State as a two separate processes.

• **Design** is considered a Professional Service (selected on a qualification – best value basis)

• **Construction** is considered a Product Service (selected on a lowest first cost – lowest bid basis)
Traditional Public Sector Project Delivery
DBB Contract Relationships
Traditional Public Sector Project Delivery
Design-Bid-Build

Misalignment of Interests between the Project Delivery Team Primary Stakeholders
• Processes Built in Separate Silos of Responsibility
• Promotion of Self-Interest ahead of Project Team Interest
• Inhibits Opportunities to Build Long Term Relationships
• Perceived Misallocation of Risks
• Inhibited Collaboration and Integration of the Project Team
• Differing Priorities of Quality, Schedule and Cost
Intensity of Stakeholder Misalignment

Cost  Time  Quality

Impact of Misalignment of Project Outcomes

Misalignment of Project Outcomes

Intensity of Team Misalignment

Cost  Time  Quality
Conceptual Alignment Model

- Project Delivery Method
- Project Stakeholder Interests
- Stakeholder Alignment Propositions
- Alignment Management System (RAID)
- Best Value Project Outcomes
Rapid Alignment Initiated Delivery

A Project Delivery Theory to Enhance Project Outcomes

"I still say it’s only a theory."
Building a Theory

Building a Theory about Improving Project Delivery

A Best Value Alignment Process
Building a Theory

View Project Delivery Through a Different Lens

Starting with an Observation

Why did projects with *Mission Critical, Cannot Fail* mandates enjoy Highly Successful Outcomes?
Rapid Alignment Initiated Delivery

Public Sector
DBB
Sealed Lowest Bid

Private Sector
Choice of PDM
Best Value

RAID
Rapid Alignment Initiated Delivery

Theory Building

A Theory is a statement of what causes what and why and under what circumstances.

- **Point of Departure:** Treat every Capital Construction project as a “No Option for Failure” Program.

- Develop a **Project Delivery Method** along a Systems Process focused on the Alignment of Stakeholder Interests and Project Team Objectives.
Rapid Alignment Initiated Delivery

Remove the ball and chain!
Rapid Alignment Initiated Delivery

Theory Building

• Understanding Behaviors in the Context that they Occur.

• **Theoretical Framework** that is applicable to both Private Sector and Public Sector construction communities.

• **RAID** is an Intervention to Improve the Project Delivery Process drawing on existing **Theoretical Perspectives**.
Theoretical Underpinnings for RAID

- Goal Systems Theory
- Relational Contracting Theory
- Stakeholder Theory
- Systems Theory
Uncovering Patterns for Project Success and Building Theory

- Critical Stakeholder Alignment Factors (CSAFs)
- Defining theoretical Stakeholder Alignment Propositions
- Exploring the theoretical underpinnings for RAID
USTA – NTC West Campus Case Study

• Use of a Single Case Study to Capture the Dynamic Nature of a Construction Project.

• Critical Stakeholder Alignment Factors Identified from the USTA-NTC Case Study which constituted the SUCF and Industry - wide Survey Questionnaire.
USTA – NTC West Campus Case Study

Building Program included
• New Tournament Courts with Grandstand and Viewing Gallery
  • New Practice Courts and Viewing Gallery Grandstand
    • New Players Transportation Hub
    • Broadcast Booth Facility

A Mission Critical, Cannot Fail (MCCF) Project
• Completion Required for 2014 U.S. Open
• Construction Start Date: March 31, 2014
• Tournament Commencement Date: August 25, 2014
USTA – NTC West Campus Case Study
USTA – NTC West Campus Case Study
<table>
<thead>
<tr>
<th>USTA-NTC Risk Register Project Phase</th>
<th>ID</th>
<th>Risk Description</th>
<th>Project Schedule Impact of Risk Event</th>
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<th>Responsibility-POC</th>
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<tr>
<td>Pre - Design Phase</td>
<td>P-01</td>
<td>CM - Contract - Damages Clauses</td>
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<td>High Risk</td>
<td>ECM Leadership</td>
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<td>ECM, USTA - NTC, Design Consultants</td>
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<td>ECM, USTA, Design</td>
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Stakeholder Alignment Risk Analysis

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## Stakeholder Alignment Risk Analysis

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USTA – NTC West Campus Case Study
Key Success Principles

• **Choice Based Procurement** – USTA-NTC employs a value driven selection process moving away from the initial low bid. CM at Risk was the delivery method of choice bringing the project team together as early as possible into the planning and design development process. Facilitated a “fast track” construction process. A/E and CM selected and brought together early in the process. **Early Contractor and Specialty Vendor Involvement**.

• **Clearly Defined Project Goals and Objectives** where the Project Team received a continuous follow of information from the Project Owner regarding budgets, schedule and quality requirements.

• **Project Team Working Relationships** - Primary stakeholders enjoyed previous working relationships with the USTA-NTC and each other. Major Trade Contractors had previous working relationships with Project Owner and the Construction Manager.
USTA – NTC West Campus Case Study
Key Success Principles

- **Achievability: Change Management:** Acknowledging the “Fast Track” nature of the project, a high level of **Transparency and Trust** is required to support an effective Change Management process. A high level of assurances and mutual trust amongst all Project Delivery Team members is required to secure timely commitments and actions.

- **Early Team Engagement and Collaboration:** Inclusion of contractor and vendor input early in the project life cycle is the most apparent benefit for any owner using alternative delivery methods to DBB. The USTA-NTC experience demonstrated that an owner cannot bring the project team together early enough in the process.
USTA – NTC West Campus Case Study
Key Success Principles

• **Project Team Competencies and Capabilities** – Due to the high level of complexity, uniqueness of the building program and achievability constraints the USTA-NTC pursued an “Early Identification” of trade contractors with historical knowledge of local site conditions and institutional knowledge of existing utilities and physical plant conditions.

• **Ethics and Mutual Trust** are the foundation for building strong relationships. Reliance on a contract to guarantee performance is not an option with a MCCF project. The handshake becomes the bond which facilitates a transactional relationship.

• **Sustained Leadership**: Sustained Visible Leadership from the Project Owner and Construction Manager throughout the entire Project Management Life Cycle.
USTA – NTC West Campus Case Study
Key Success Principles

• **Risk Allocation: Fair Compensation** – Equitable balancing of risk allocation amongst stakeholders as well as the trade contractors. *Transparency* is a fundamental requirement where all parties feel that they are receiving fair value for their effort and dollars.

• **Financial Objectives: Timely Payment Process** – As an incentive to provide resources and fully engage in the delivery process, the USTA-NTC introduced a bi-weekly trade payment process and a two week turn around for payment. Trade Contractors and Vendors had the knowledge that every trade requisition dollar as approved by the project owner would fully mirror the payments from the Construction Manager.

• **Long Term Relationships**: The possibility of a future contract award. Project Team members are able to establish effective relationships with one another that will lead to repeat or future opportunities.
USTA – NTC West Campus Case Study
Critical Stakeholder Alignment Factors (CSAFs)

- Clear Project Goals and Objectives
- Transparency
- Mutual Trust
- Relationships
- Ethics
- Risk Allocation
- Resources
- Accountability
- Responsibility
- Leadership

- Achievability
- Organization Culture
- Financial Objectives
- Capabilities
- Competencies and Experience Levels
- Team Integration and Collaboration
- Complexity
- Agility and Flexibility
- Influence
- Engagement
Stakeholder Alignment Propositions

Proposition No. 1 - Appropriate Project Delivery Systems
Proposition No. 2 - Ethical Behavior
Proposition No. 3 - Clearly Defined Goals and Objectives
Proposition No. 4 - Sustained Visible Leadership
Proposition No. 5 - Competencies and Capabilities
Proposition No. 6 - Relationships and Integrated Teams
State University Construction Fund Study
Research Framework

• 180 Projects Evaluated for Cost Growth
• 20 Best Performing and 20 Worst Performing Identified
• Stakeholder Alignment Survey for 32 of the 40 Archived Projects
• Stakeholder Alignment Survey: 100 plus questions
  Project Manager Experience in excess of 20 Years.
SUCF – Survey Findings
Decision Making, Leadership and Competencies

• SUCF Project Managers – Owner Decisions always made in the best interest of the project whether HS of SC. With HS projects, SUCF PM’s felt the Design Consultants and Contractors also made decisions in the best interest of the project. With SC projects perceptions were dramatically different. Felt both Consultants and Contractors put their own interests ahead of the Project.

• Similar results with perspectives related to providing effective Leadership, Competencies and Reputation begging the question – How do all stakeholders perceive their self worth?
Highly Successful Projects Exhibited

- A High Level of Trust between Stakeholders
- Sustained Visible Leadership throughout the PLC.
- Individuals taking Ownership and Responsibility for Changes in the Work.
- Clearly Defined Project Objectives and Goals
- Stakeholders being Properly Represented throughout the Project Life Cycle.
- High Level of Cooperation and Collaboration between the Primary Project Delivery Stakeholders.
SUCF – Survey Findings

Significantly Challenged Projects Exhibited

• Poor Cooperation and Collaboration – No Team Building Techniques as part of the Delivery Strategy.
• Low Levels of Trust amongst Stakeholders
• Ineffective Leadership by the DC and Contractor.
• Subpar coordination effort between the Lead Designer and Consulting Engineers.
• Misaligned priorities between Cost, Schedule and Quality. PM’s felt that the Contractor’s decision making was driven by costs only.
Some Additional Thoughts

• Overwhelming Support for a Delivery Process which includes Early Contractor Involvement (ECI).

• SUCF had a strong following for the bidding of the Agency’s sponsored work though the opportunity to build long term relationships was not a strong prospect. Nearly 50% of the projects were built by contractors with prior experience with the agency.
Some Additional Thoughts

• The survey results suggest that a key requirement for the development of a project management optimization strategy is the understanding and appreciation of stakeholder perspectives.
Rapid Alignment Initiated Delivery Conceptual Model
Rapid Alignment Initiated Delivery

• **All About Perspective** – A Different Way of practicing Construction Project Delivery.
• Treat each program as a _Mission Critical Cannot Fail (MCCF) project._
• Encourages the Project Team Primary Stakeholders to _behave differently._ Part of something bigger than themselves.
• Project Team Interests in front of Individual Stakeholder Interests.
• Does not mean Stakeholder Interests are not addressed.
• Does mean that Stakeholder Interests are _Aligned_ with the Project Interests.
• Risk Management and Strategic Planning for the Project Delivery Team’s Primary Stakeholders
Rapid Alignment Initiated Delivery

• Bring the Project Team Together as *Early as Possible*
• Focus on *High Risk Events*
• Clear Understanding of *Stakeholder Interests*
• Identify Team Leadership (Project Owner, Design Consultants and Constructor) – *Open the Communication*
• *Sustained Leadership* built on Ethics, Trust and Transparency
• Create a *Sense of Urgency* and Accountability throughout the Project Management Life Cycle
• *Change the Culture* from one of protecting individual self interests to one of looking out for each other.
Rapid Alignment Initiated Delivery

• A Best Value Alignment Process ensures teams will be working toward the same objectives and project goals creating a common understanding that reduces conflicts and risks while maximizing outcomes.

• RAID is a process to get that done !!!
QUESTIONS?