Project Organization and Contracts

Will you enter into a Contract with this Guy?
Project Organization and Contracts

Definition

PMI: ”a project is a temporary endeavor undertaken to create unique product or service”

Turner: “An endeavor in which human, material and financial resources are organized in a novel way to undertake a unique scope of work, have given specification, within constraints of cost and time, so as to achieve beneficial change defined by quantitative and qualitative objectives”

Turner (2003)
“A project is a temporary organization to which resources are assigned to undertake a unique, novel and transient endeavor managing the inherent uncertainty and need for integration in order to deliver beneficial objectives of change”
 Characteristics of three main types of institutional arrangements

<table>
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<tr>
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<tbody>
<tr>
<td><strong>Organization systems</strong></td>
<td>Small, dynamic By Entrepreneurs</td>
<td>Hierarchical Risk internalized by large system</td>
<td>Networks Risk allocated to participants</td>
</tr>
<tr>
<td><strong>Risk allocation</strong></td>
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</table>
The organizational structure may be defined as:

“The relativity enduring allocation of work roles and administrative mechanisms that creates a pattern of interrelated work activities, and that allows the organization to, conduct, coordinate and control its work activities”

Project Organization and Contracts

Project Life Cycle

Owner's Governance structure
Corporate Environment (system)

Corporate
Business Area
Idea Generation
Concept
Definition
Exec.
Operation
Abandon

Five Modes of Uncertainty
• Corporate
• Business models and concepts
• Project Execution
• Operation
• Abandon

Ownership?
Stakeholders?
Concurrent Engineering?
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Project Life Cycle

- Vision, aim, position
- Governance mechanisms
- Strategic choice
- Product/project selection
- Start execution
- Contracts
- Handover
- Production start-up
- Operation
- Abandonment

Uncertainty flow diagram
Major decisions and Life cycle of project risk
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- Systems in operation

1) Ownership
2) Project
3) Value chain
4) Market

PDOA: Plan, develop, operate and abandon

- Owner’s
- The Agent (The Firm)
- Revenues (profit)
- Market
- Projects

Social and institutional environment
Capital Investments and forces.

δ
Power, knowledge ethic’s, moral and competences

ε
Baying and bargaining

γ
Needs and conformance

β, Market force

α
Competitiveness

Market

Operator

Agent

The Firm, “agent”

Owner’s

P

Social and institutional environment

Needs and conformance

Market force
Competitiveness

Mark

et

produce

Owner

Market force

Power, knowledge ethic’s, moral and competence

Social and institutional environment

Baying and bargaining

indicators

Competitiveness

Global

National

Owner

Indicators

Global market supply

Global product market

Indicators

Competitiveness

Global supply market

Global market

Market force

Markets

indicators
Project Organization and Contracts

Architecture

People

Processes

Systems

Objects

Structures
A holistic approach and value oriented management of project uncertainties

Image by MIT OpenCourseWare.
What is Corporate Governance?

- Governing is enabled by a series of properties in the strategic system selected for planning and execution of the project, which constitutes what, can be termed as governability. Miller and Lessard (2000)
- Corporate governance deals with the ways in which suppliers of finance to corporations assure themself of getting a return on their investment. Shleifer and Vishny (1997)
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What is Corporate Governance?

- Corporate governance is the system by which business corporations are directed and controlled. The corporate governance structure specifies the distribution of rights and responsibilities among different participants in the corporation, such as, the board, managers, shareholders and other stakeholders, and spells out the rules and procedures for making decisions on corporate affairs. By doing this, it also provides the structure through which the company objectives are set, and the means of attaining those objectives and monitoring performance, OECD April 1999.
Project Organization and Contracts
The Firm

Macro economic policies
Competition and product and factor market
Legal, regulatory and institutional environment

Governance
Owner(s) → Board → Firm

Contract

Value Creation
- Revenues
- Value Chain
- Investments
- Projects
- Products/services

Stakeholders

Agency Cost

Ethics
Awareness of environmental and social interests

Value Chain
Governance of Complex Business Models?

Stakeholders

Supply of product/service

Cluster/Network

Market

Capital Investment/enterprise

Market
Project Organization and Contracts

- Major organizational archetypes

Archetypes
- Functional
- Divisional
- Matrix

Hybrid organization
- Projects
- Enterprises
### Project Organization and Contracts

#### Types of project organizations

<table>
<thead>
<tr>
<th>Type of organization</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Functional hierarchy</td>
<td>• Operational areas are responsible</td>
</tr>
<tr>
<td>• Coordinated matrix</td>
<td>• Coordinator, responsibility but no authority</td>
</tr>
<tr>
<td>• Balanced matrix</td>
<td>• Shared with operational areas</td>
</tr>
<tr>
<td>• Secondment matrix</td>
<td>• Operations maintain responsibility of assigning resources/personnel</td>
</tr>
<tr>
<td>• Project hierarchy</td>
<td>• The project manager maintain full responsibility and authority</td>
</tr>
</tbody>
</table>
Project Organization and Contracts

- Evolution of Organizations

- New Business Models & Value-creation Frameworks
- Architecting Future Organizational models
- Evolving Robust & Adaptive Organizational models

Moving towards new lean frontier
Project Organization and Contracts

Old Approach
Vertical
Principal (p)
Main Contractor (c)
Supplier (s)

Current lean Collaborative

Emerging lean Virtual team

Trust
Project Organization and Contracts

Traditional Approach

- Company
  - Function
    - Stable Input
      - Stable Process
    - Stable Intermediates
      - Stable Process
    - Stable Intermediates
      - Stable Process
    - Stable Intermediates
      - Stable Process
  - Function
    - Stable Product
ARCHITECTURAL INNOVATION: Major modification of how components in a system/product are linked together

- Significant improvement in system/product architecture through changes in form/structure, functional interfaces or system configuration
- Knowledge integration over the supplier network (value stream perspective; prime-key suppliers-subtiers; tapping supplier technology base)

Source: Bozdogan, LAI
Project Organization and Contracts

Project based company

Company

Function

Function

Function

Bespoke Intermediates

Bespoke Input

Novel Process

Novel Process

Novel Process

Bespoke Product
Project Organization and Contracts

transaction cost

Degree of asset specificity (k)

Markets(1) Networks(2) Integration(3)

TC1 (k) TC2 (k) TC3 (k)

Total Cost
Evolutions of Organizations

- People and hierarchy
  - Low
  - High

Integration

- Goals and Control
- Value and sustainability

System - hierarchy?

Time now

Time
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Evolutions of Organizations

People and hierarchy
Integration

Goals and Control

Time now

Time

Value and sustainability

New Ways of working

?
Building Governance into major Capital investments

- The Knowledgeable Owner's Planning of Governance.
- The Knowledgeable Owner's Representative Ensure appropriate Governance in place and monitors the performance.
- The Knowledgeable owner monitors the development and take action.

- Market, political, financial and legal aspects of the Owner's
- The Capital investment Project and the Social and Institutional Environment
- Building Governance Into Projects

Execute project
Start up
Operate
Abandon

Dynamic Positioning Sustainable Development
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Evolutions of Organizations

- New strategic systems perspective
- Viewing project organizations as holistic and highly networked systems
- Integrating management processes, lifecycle processes and enabling infrastructure systems
- Balancing needs of multiple stakeholders working across boundaries
1. What are the main drivers in the process of selecting a type of project organization?
2. What are the main success criteria for contract execution models?
3. What typical conflicts can develop in a matrix org, integrated org., and alliances?
4. What do you consider being critical success factors in order to achieve an effective integrated/alliance project organization?
## Project Organization and Contracts

- **Contracts,**
- **goals and incentives (traditional setting)**

<table>
<thead>
<tr>
<th>Client</th>
<th>Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPV</td>
<td>Profit during execution</td>
</tr>
<tr>
<td>Profit during operation</td>
<td>Contractor does not participate during operation</td>
</tr>
<tr>
<td>Optimize operation</td>
<td>Optimize within the framework of the contract scope</td>
</tr>
</tbody>
</table>

Contractual arrangements and principles founded on the assumption that the parties “objectives” are fully coherent may be counterproductive and create conflicts during execution.
Project Organization and Contracts

- Contract, goals and incentives
- Lessons learned

• Establish individual objectives and goals in order to agree a realistic setting of common goals for the contract.
• Agree on behavior and actions.
• How to manage conflicts.
• Communicate both common and conflicting goals to the team.
• Establish and implement change control systems.
• Know the rights and obligations of both parties.
Lessons Learned (Statcon report)

Summary

• More attention to formal business principles, commercial aspects.
• Common goals should be reconsidered.
• Contractor maximizes profit, and client NPV.
• Contractor profit is Client expenses.

In EPCI Contracts
• Lack of strategic balance.
• The Contract terms do not reflect the EPCI Concept.
• The compensation format does not reflect the technical definition at contract award.
• Client influence (integration).
• Contractor risk is not fully reflected in the pricing format.
• Imbalance between project execution model and scope of work.
Project Organization and Contracts

- Contract, goals and incentives
- "Trust"
  - One can not commit oneself to "trust"
  - Trust can only be earned.

Act in a trustworthy way
Project Organization and Contracts

Contract and Risk

**Definition and management of risk**
(important part of the Contract)

- **Need**
- **Offer**

**Supplier**

- Objectives
- Requirements
- Ambitions

**Customer**

- Objectives
- Requirements
- Ambitions

Clear picture of risk and sharing of risk between supplier & customer before entering into a Contract

Estimating and Control of Risk
## Project Organization and Contracts

### Selection of Compensation format (simplified)

<table>
<thead>
<tr>
<th>Selection Criteria</th>
<th>High</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
<th>Low</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of technical definition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Client’s involvement</td>
<td>None</td>
<td>Low</td>
<td>None</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Market capability</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Medium</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>

### Compensation format

- **Lump sum**
- **50/50 Target Sum**
- **Unit Rate**
- **Neutral**
- **Day-Work**
- **Reimbursable**
## Project Organization and Contracts

### Estimating

<table>
<thead>
<tr>
<th>Identification</th>
<th>Definition</th>
<th>Execution</th>
</tr>
</thead>
</table>
| **Parametric** | - Factoring  
- Analogous system  
- Vendor quotes  
- Engineering build up | Unit rates x Quantities |
| \( \left( \frac{Q_1}{Q_2} \right) = \left( \frac{C_1}{C_2} \right)^n \) | +/- 40% | +/- (30 to 10) % | +/-5% |