

MIT OpenCourseWare  
<http://ocw.mit.edu>

1.040 Project Management  
Spring 2009

For information about citing these materials or our Terms of Use, visit: <http://ocw.mit.edu/terms>.

# Project Organization and Contracts

Will you enter into  
a Contract with this  
Guy ?



Courtesy of Oddmund Granli, 2002

Image courtesy of [longhorndave](#) on Flickr.

# 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*”

# Project Organization and Contracts

- Characteristics of three main types of institutional arrangements

	Entrepreneurial (1800-	Rational System (1920-	Governance (1980-
•Organization systems	Small, dynamic	Hierarchical	Networks
•Risk allocation	By Entrepreneurs	Risk internalized by large system	Risk allocated to participants

# Project Organization and Contracts

- Organizational structure

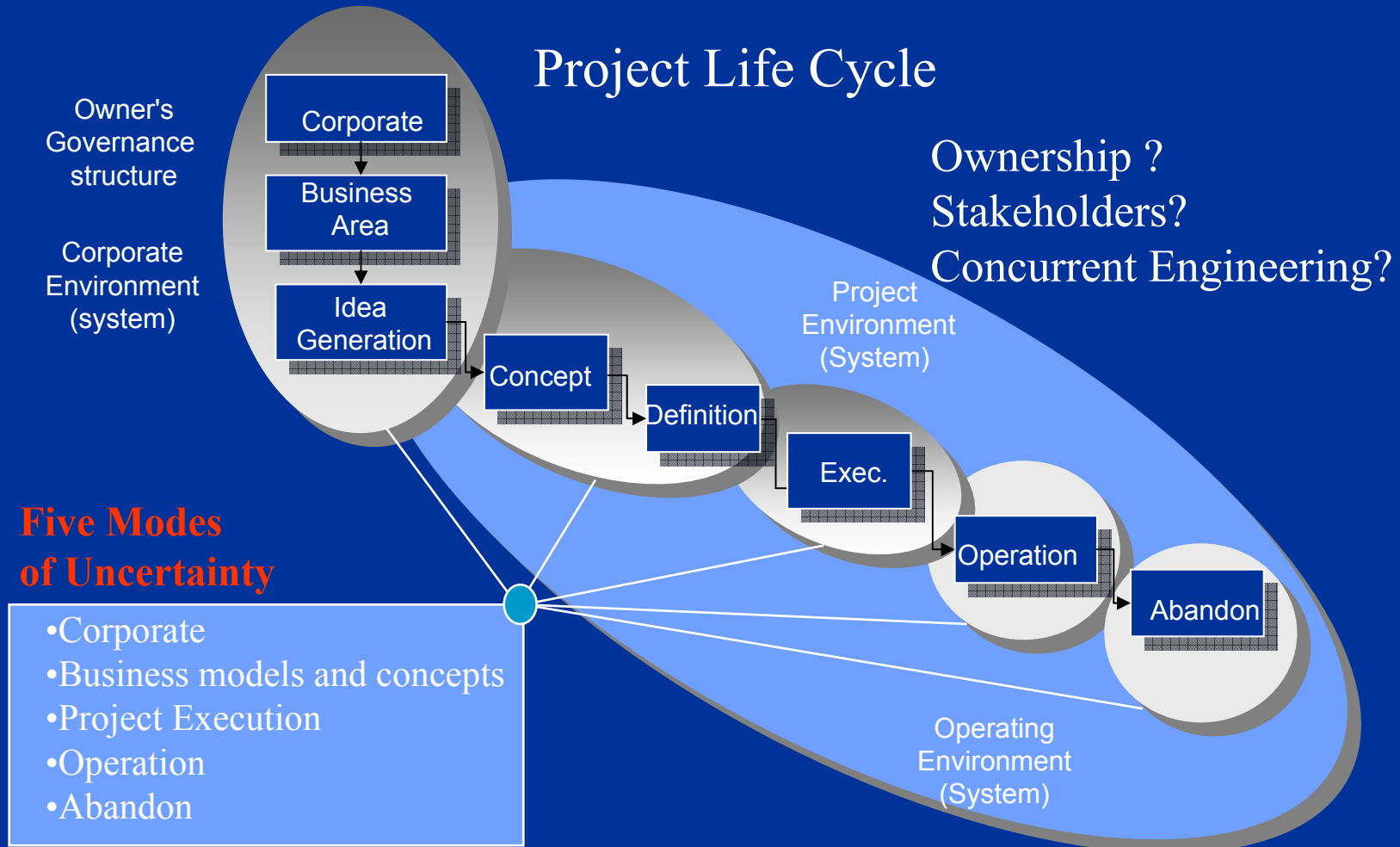
The organizational structure may be defined as:

“The relatively 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**”

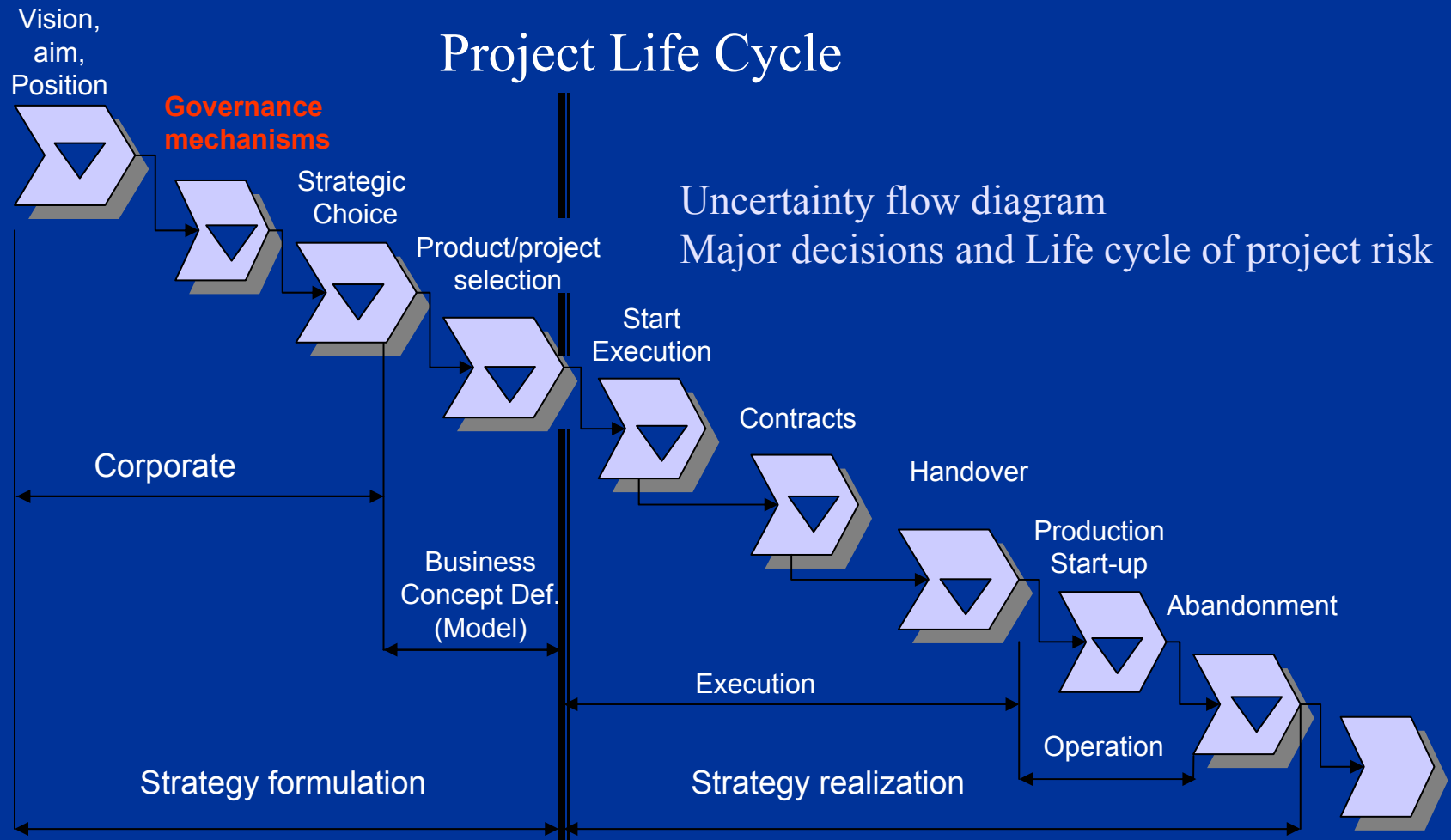
*(Jackson and Morgan, 78) in Arnoldo, C, Hax and Nicholas, S, Majluf (1981) “Organizational Design, A Survey and Approach”*

# Project Organization and Contracts

## Project Life Cycle

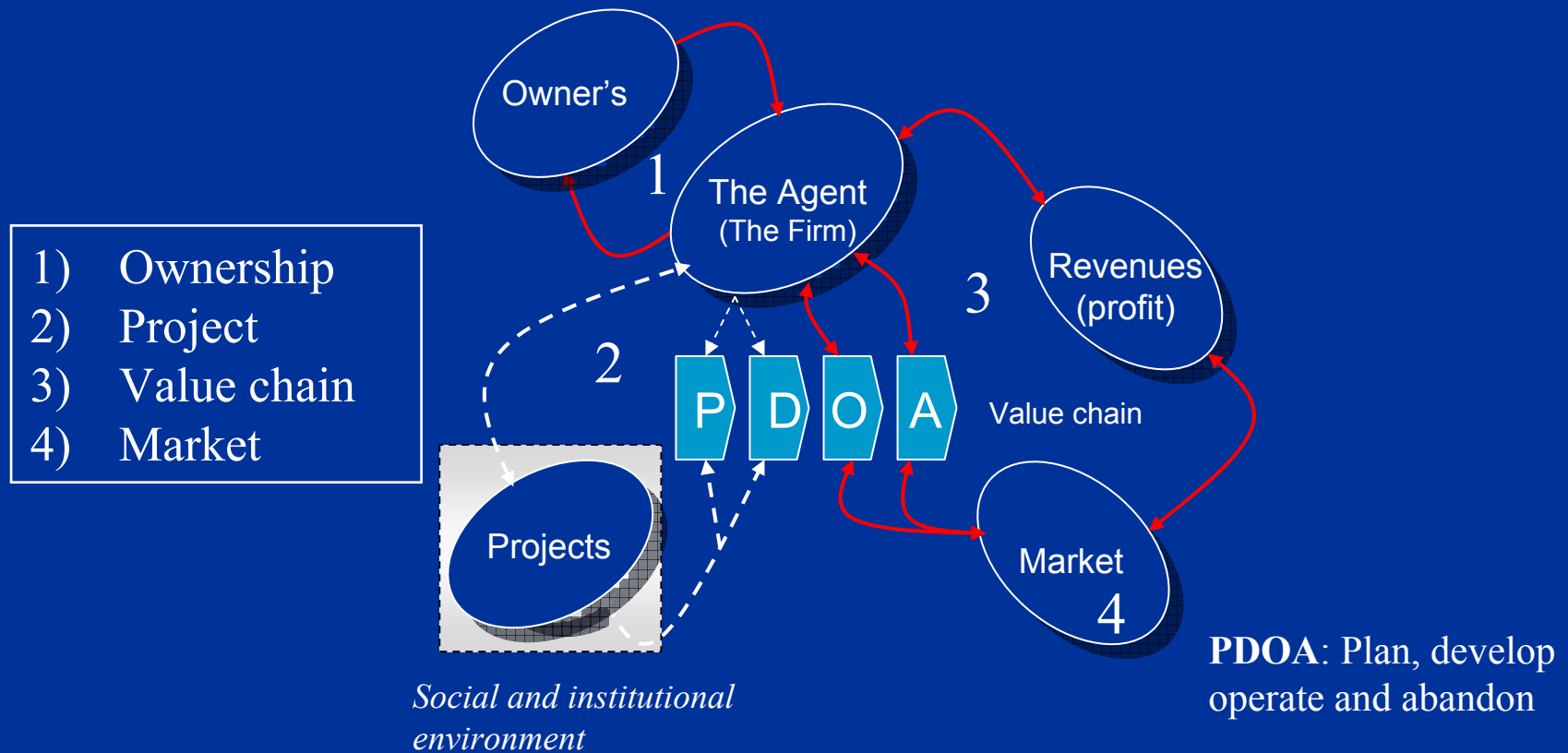


# Project Organization and Contracts



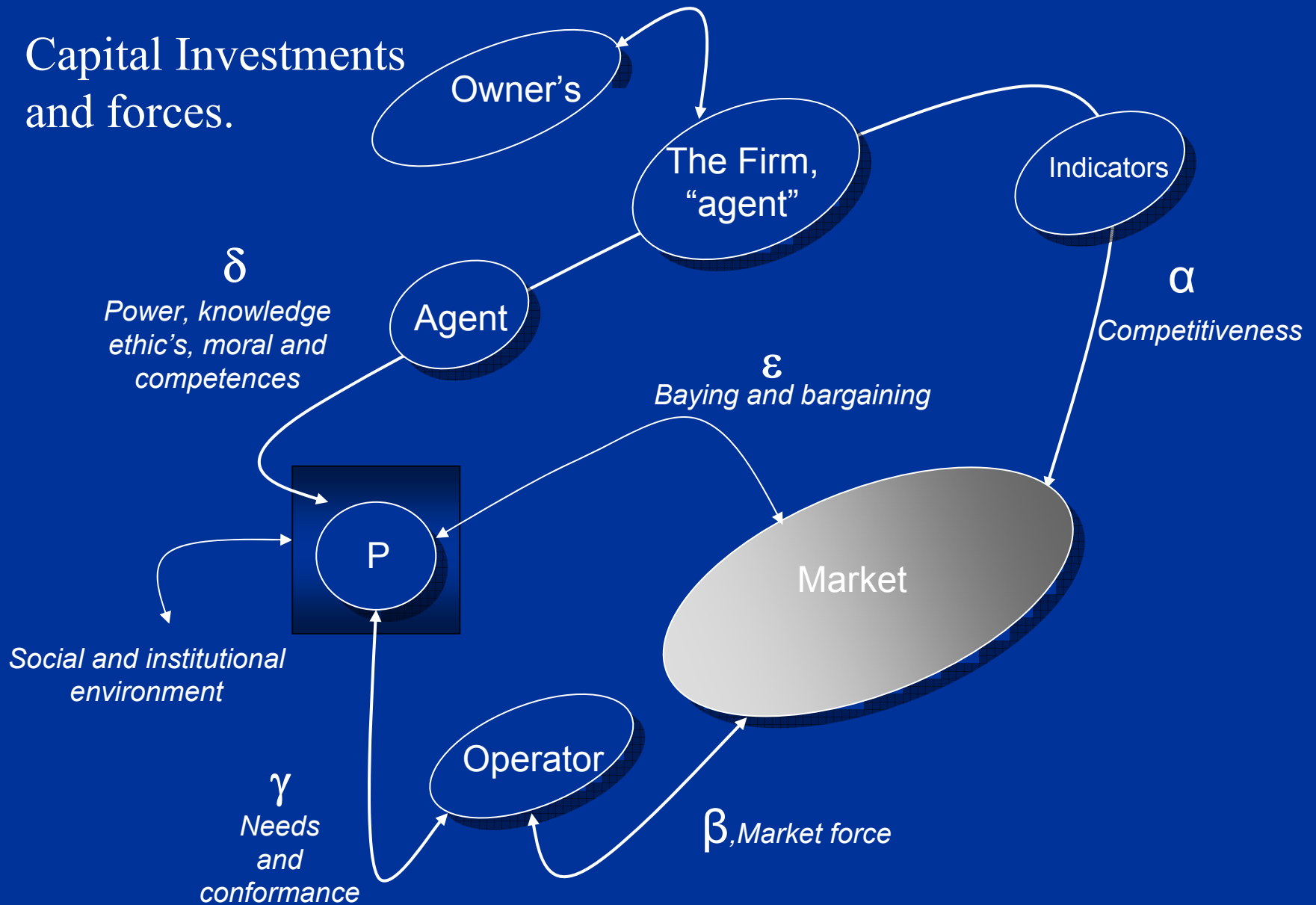
# Project Organization and Contracts

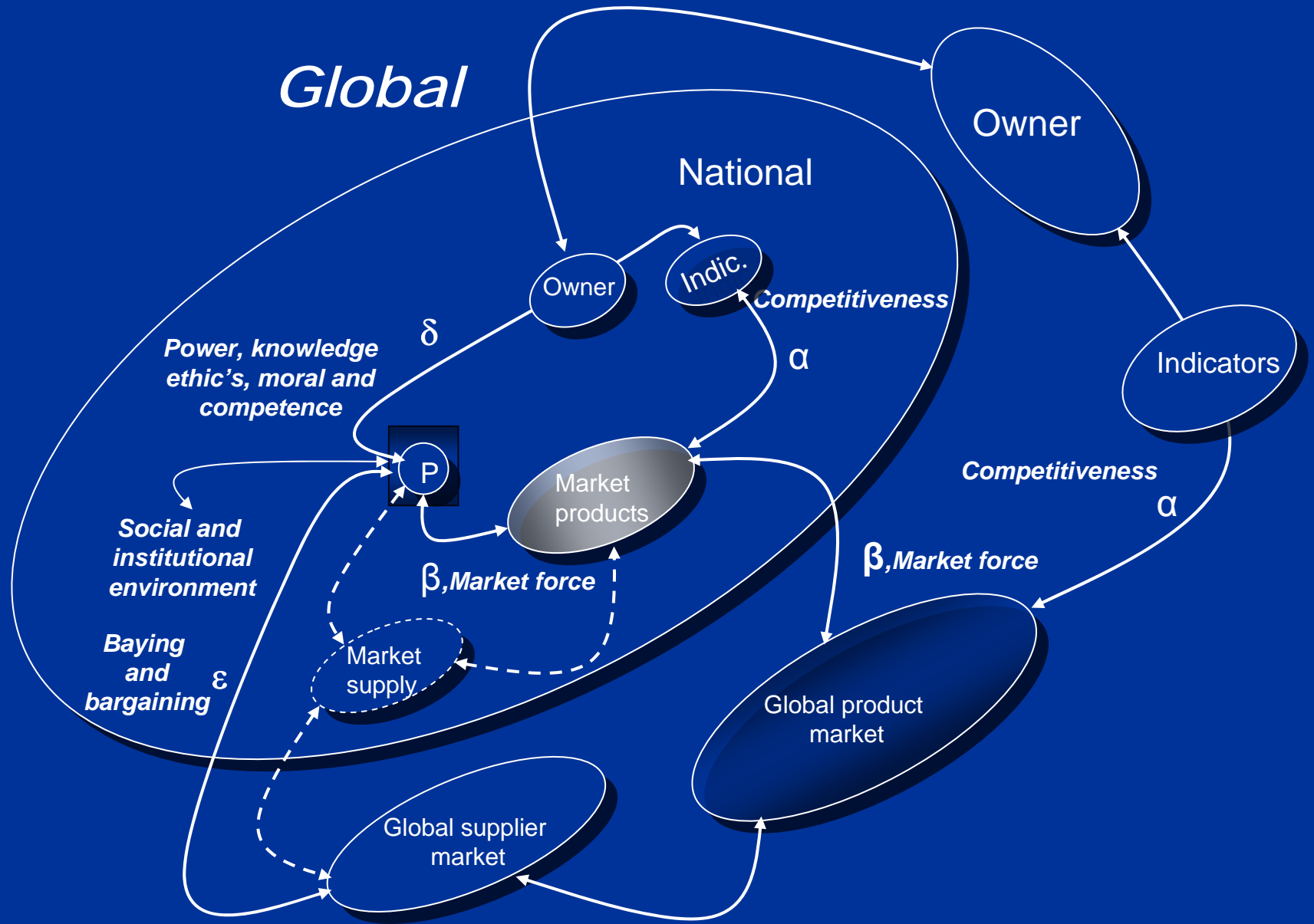
## ■ Systems in operation





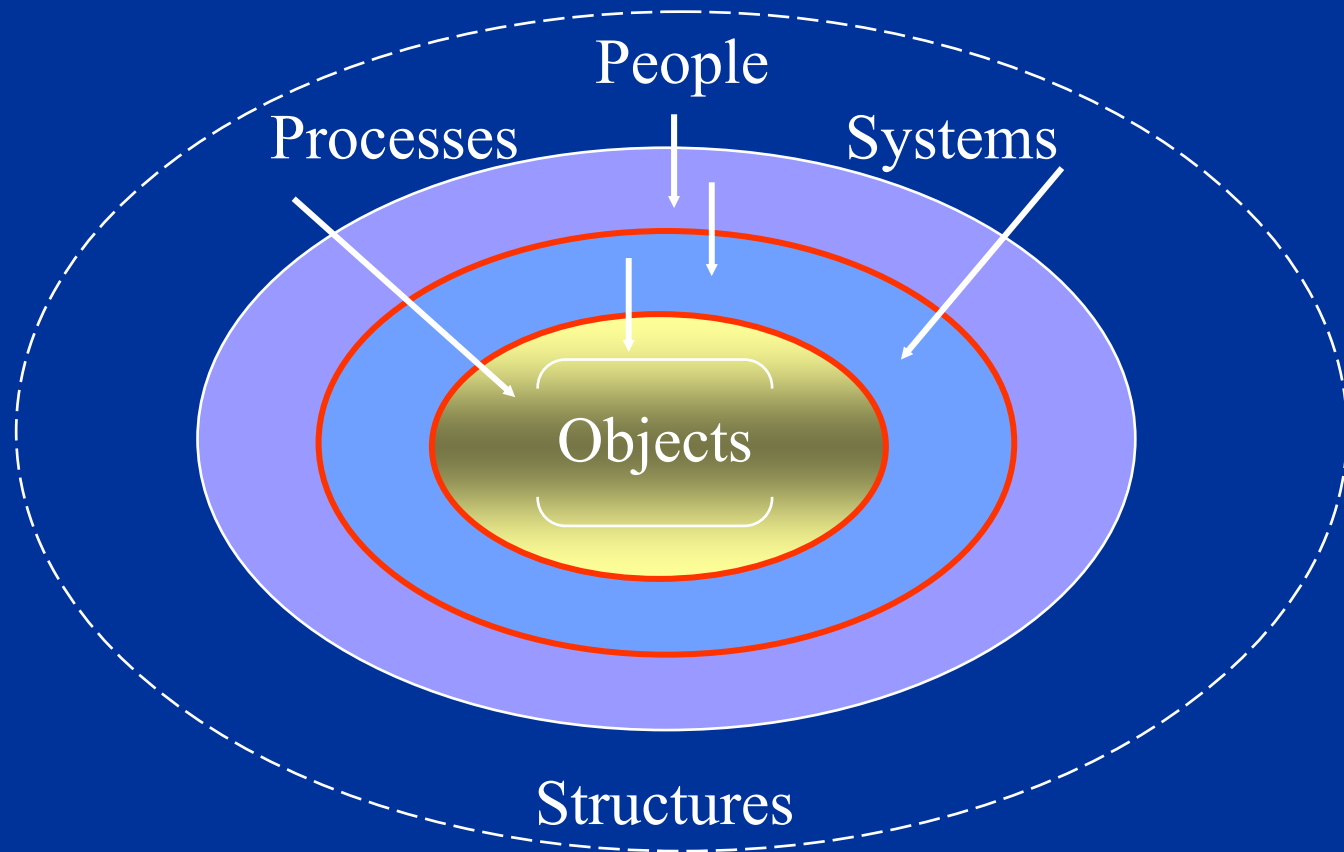
Capital Investments  
and forces.



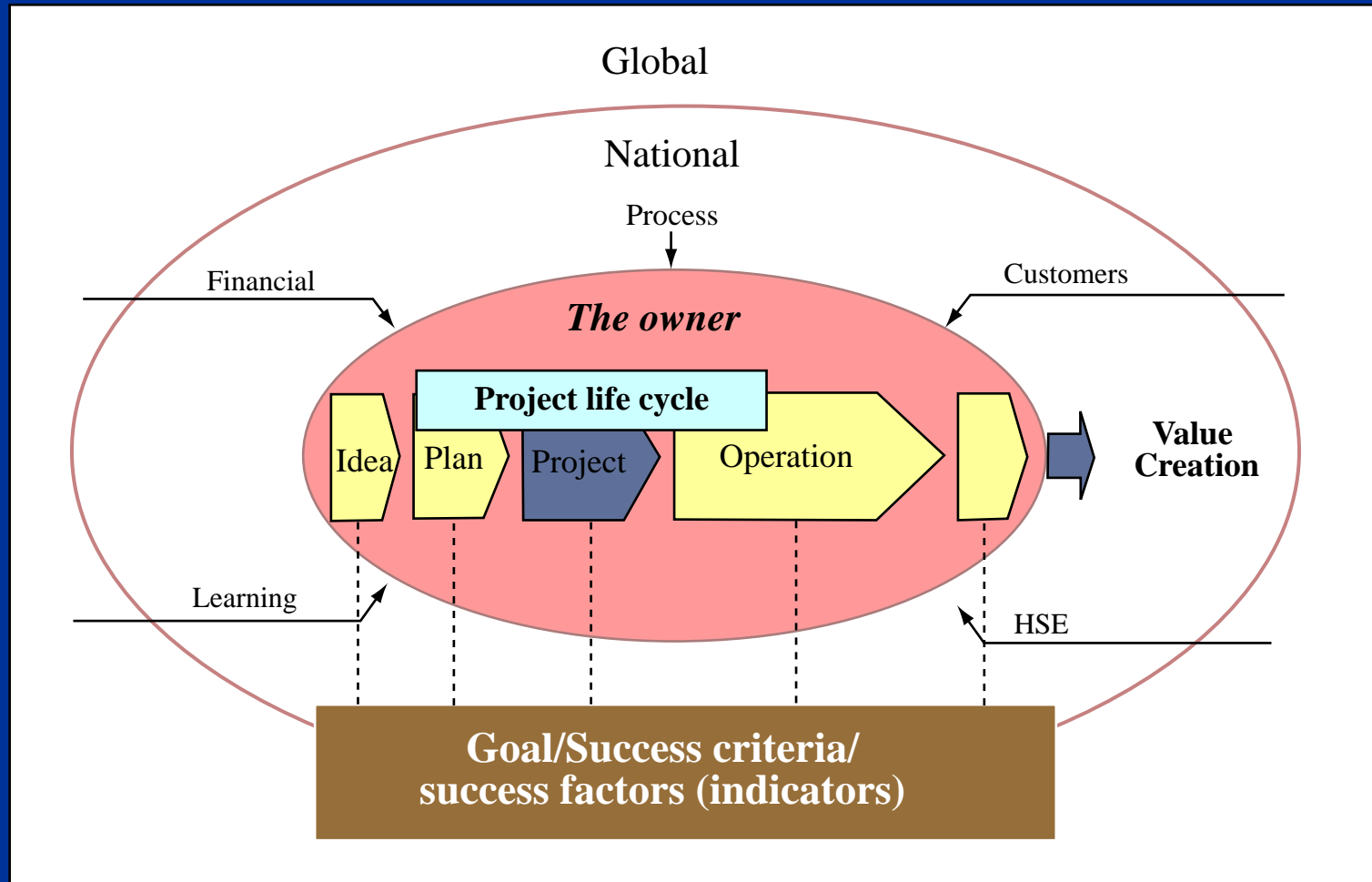


# Project Organization and Contracts

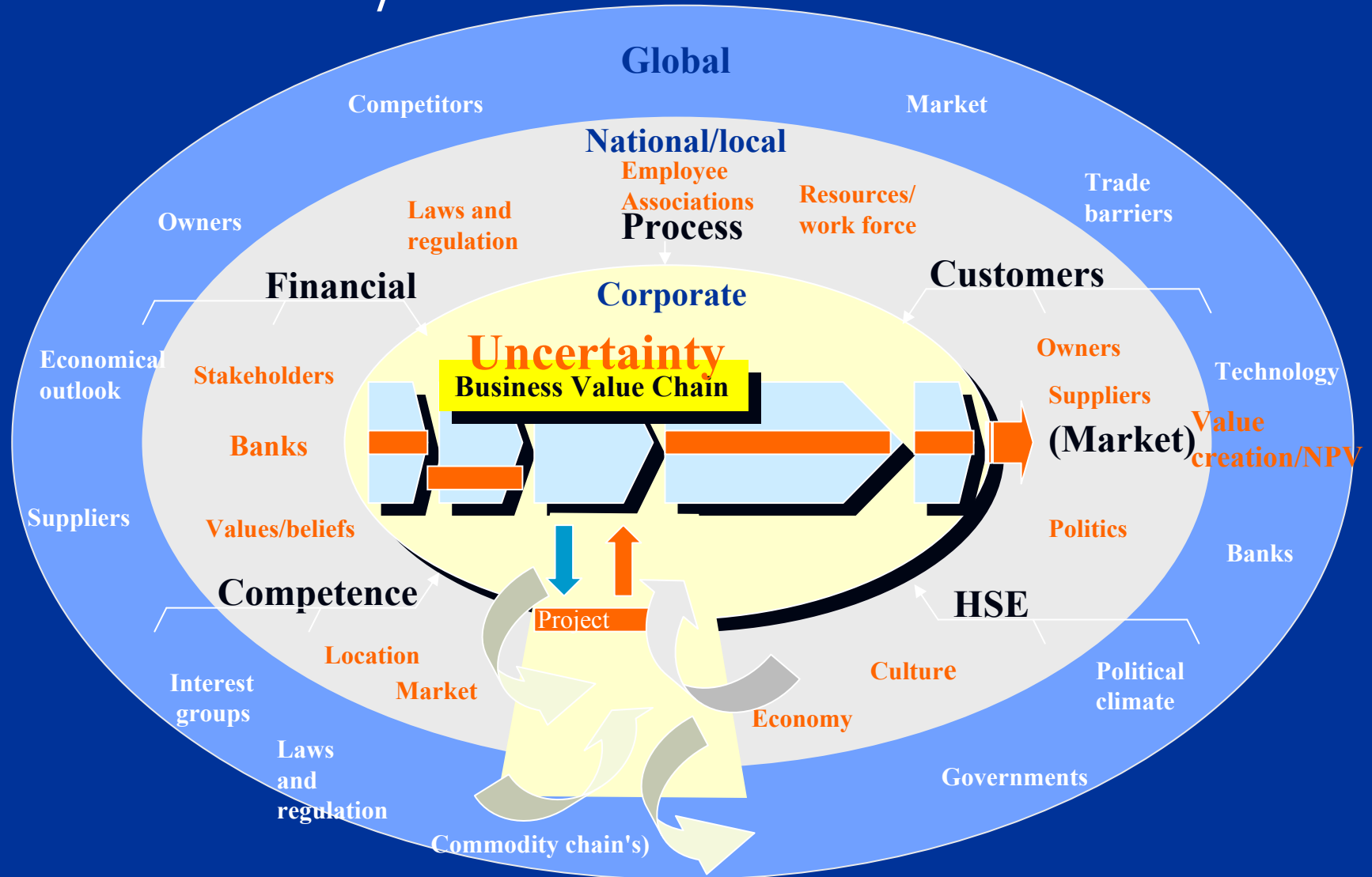
Architecture



# A holistic approach and value oriented management of project uncertainties



# A more rich picture



# Project Organization and Contracts

## 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 themselves of getting a return on their investment. Shleifer and Vishny (1997)

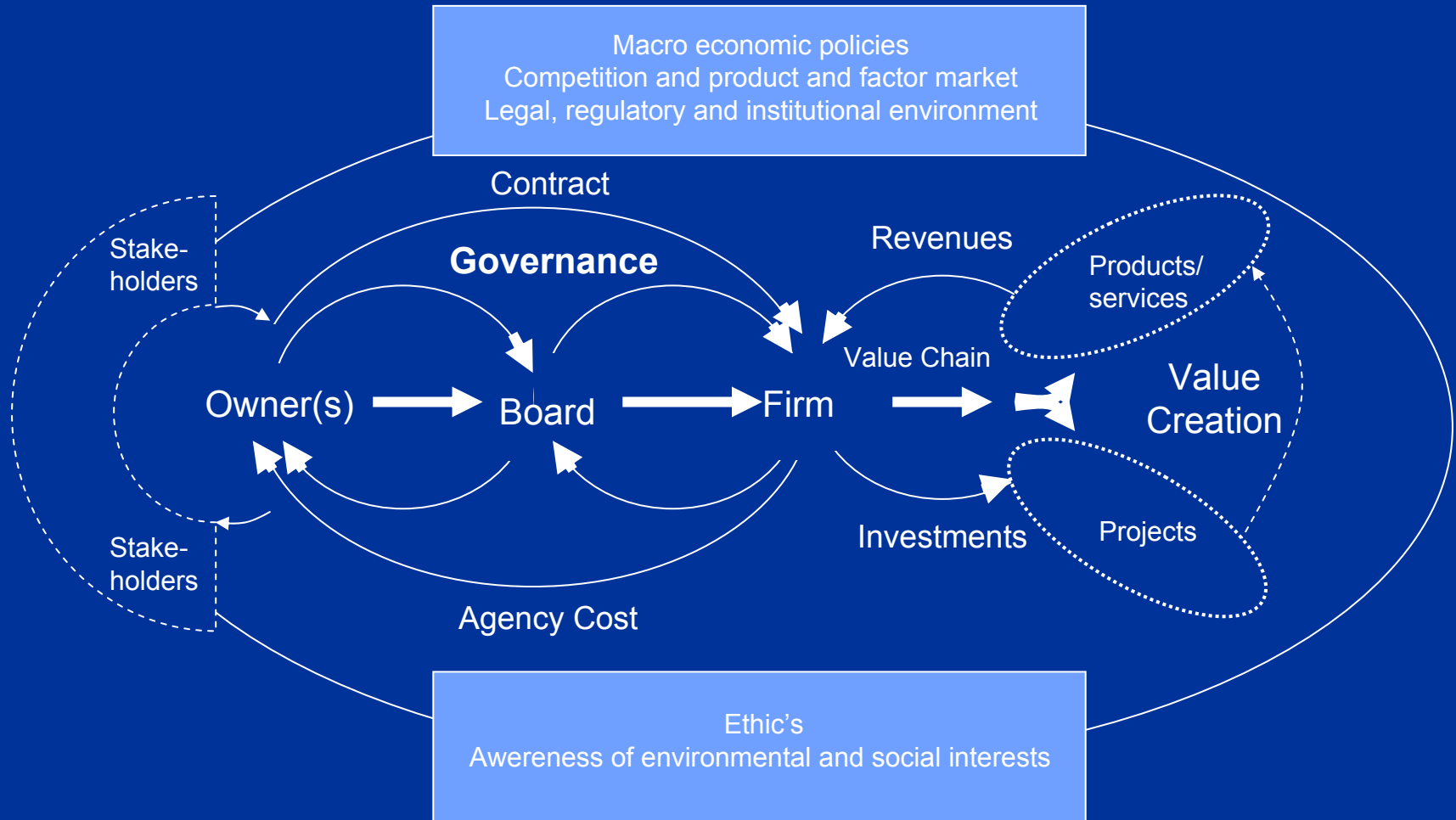
# Project Organization and Contracts

## 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

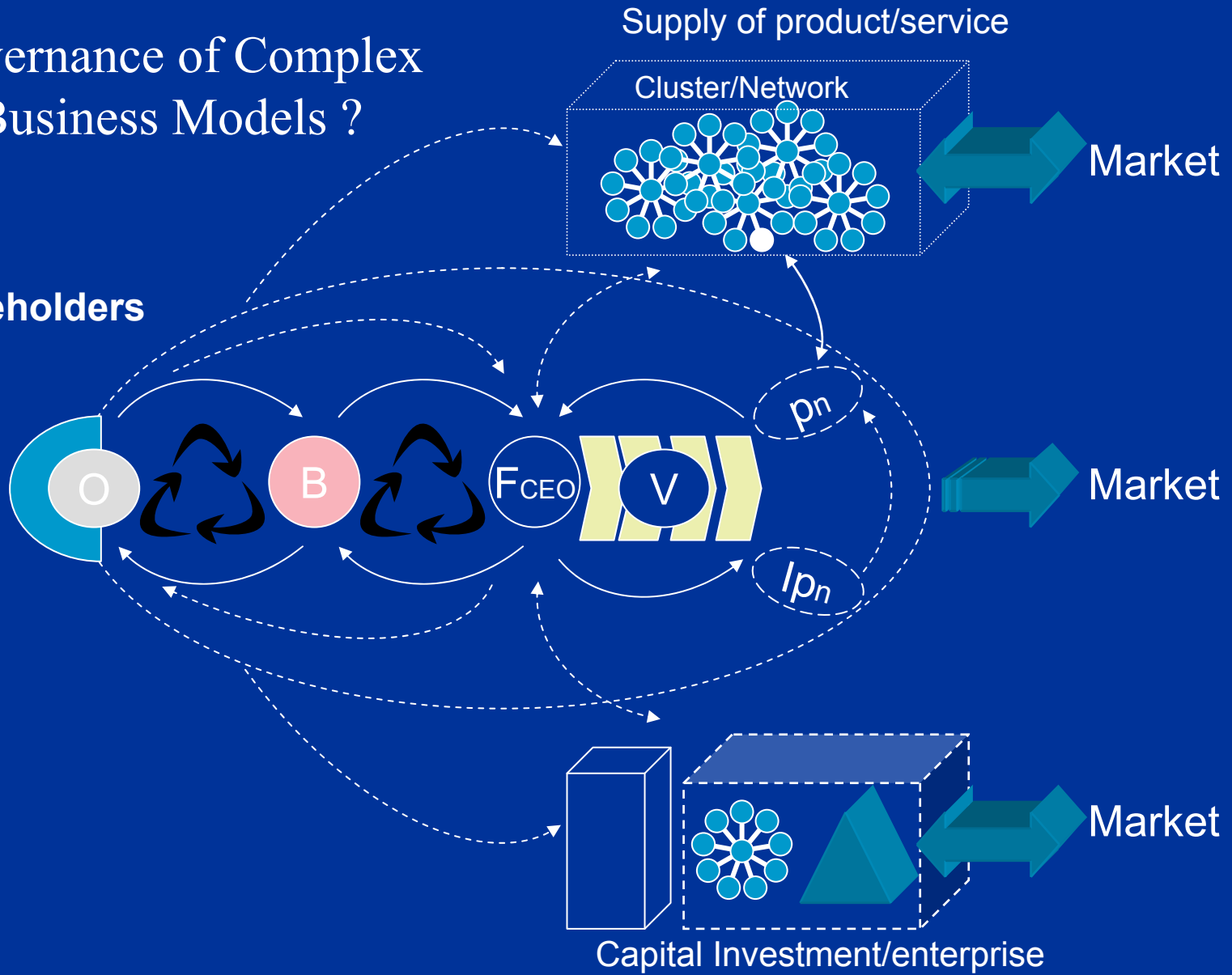
## The Firm





# Governance of Complex Business Models ?

## Stakeholders

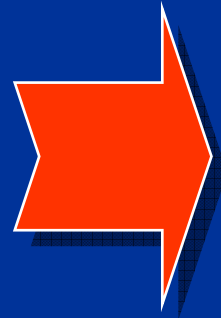


# Project Organization and Contracts

- Major organizational archetypes

## Archetypes

Functional  
Divisional  
Matrix



Hybrid organization

- *Projects*
- *Enterprises*

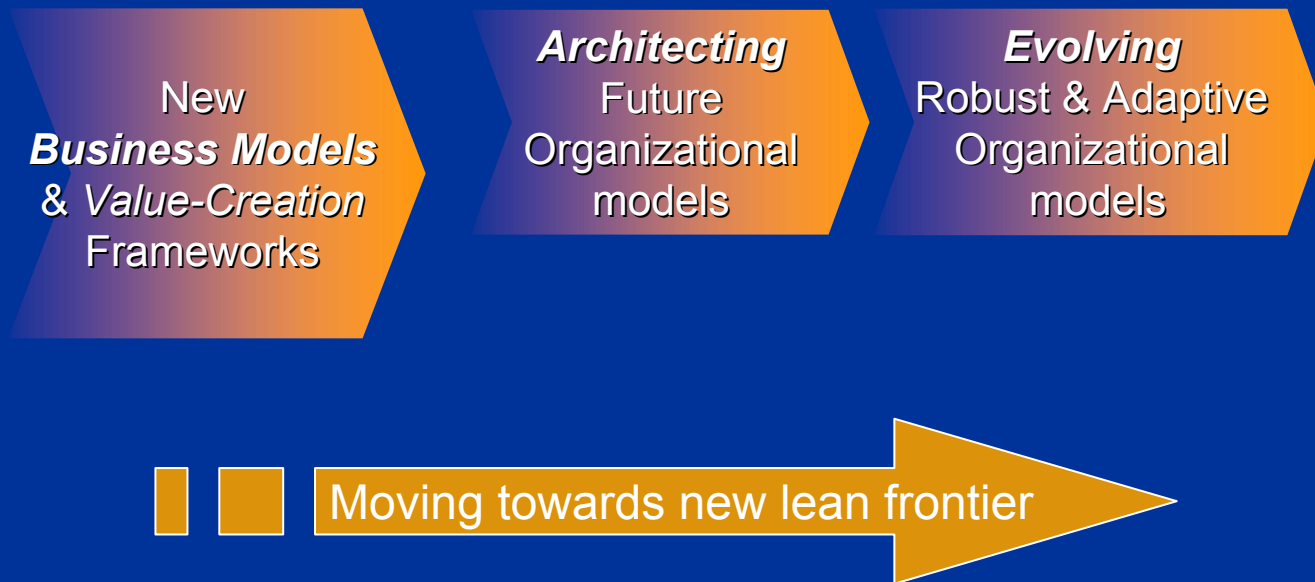
# Project Organization and Contracts

## Types of project organizations

Type of organization	Responsibility
<ul style="list-style-type: none"><li>•Functional hierarchy</li><li>•Coordinated matrix</li><li>•Balanced matrix</li><li>•Secondment matrix</li> <li>•Project hierarchy</li></ul>	<ul style="list-style-type: none"><li>•Operational areas are responsible</li><li>•Coordinator, responsibility but no authority</li><li>•Shared with operational areas</li><li>•Operations maintain responsibility of assigning resources/personnel</li><li>•The project manager maintain full responsibility and authority</li></ul>

# Project Organization and Contracts

- Evolution of Organizations

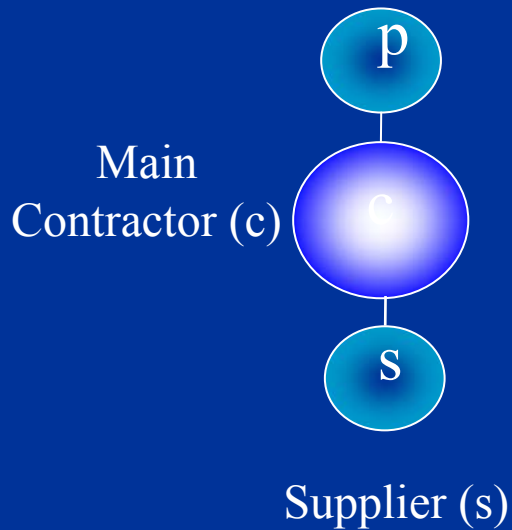


# Project Organization and Contracts

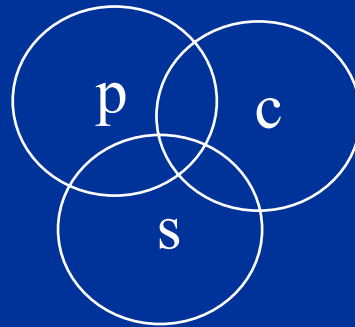
Old Approach

Vertical

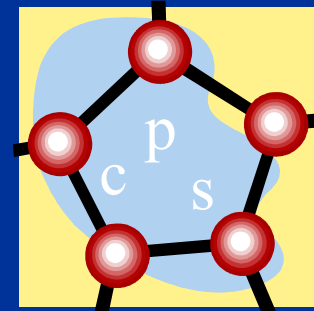
Principal (p)



Current lean  
Collaborative

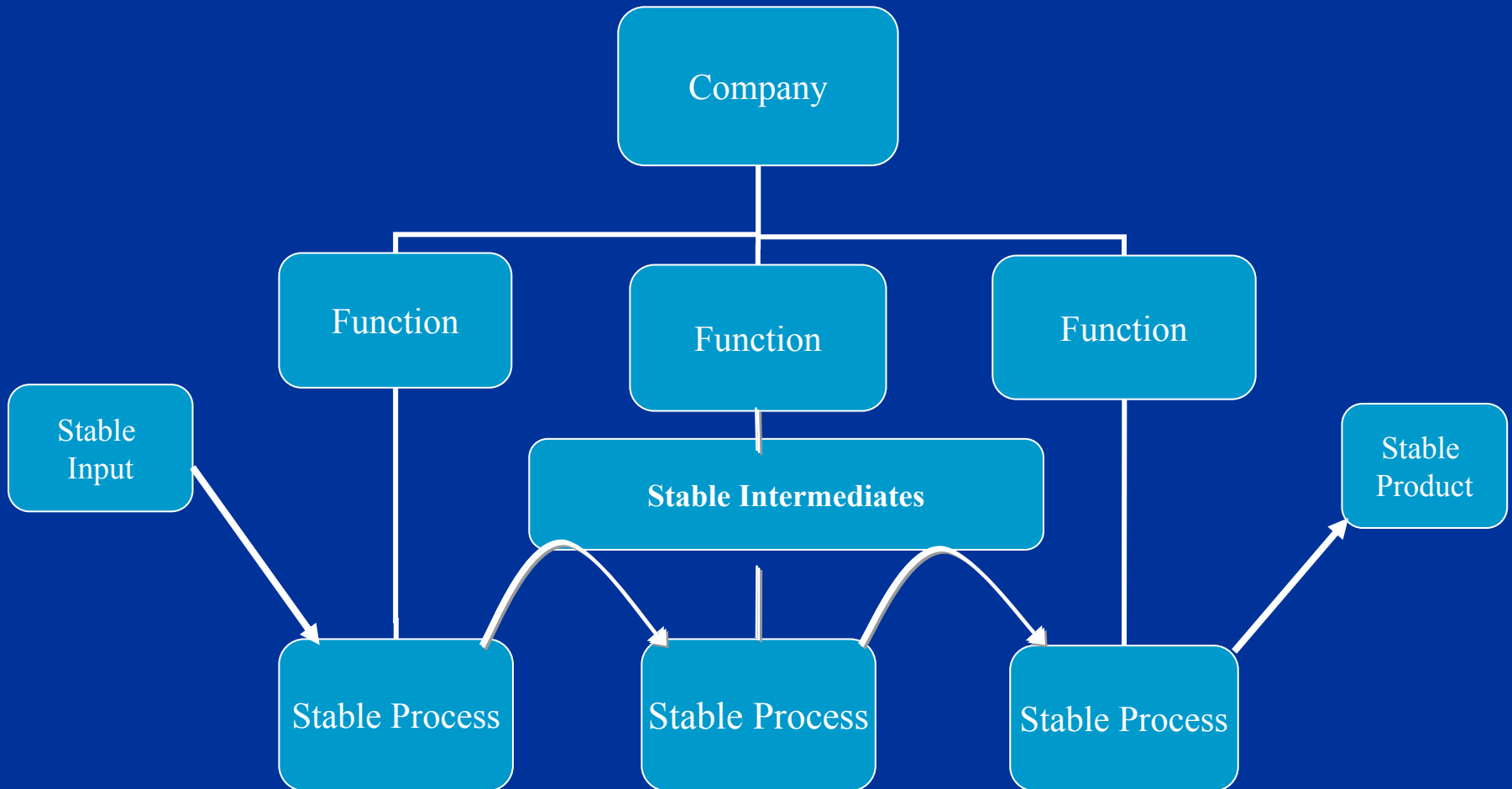


Emerging lean  
Virtual team

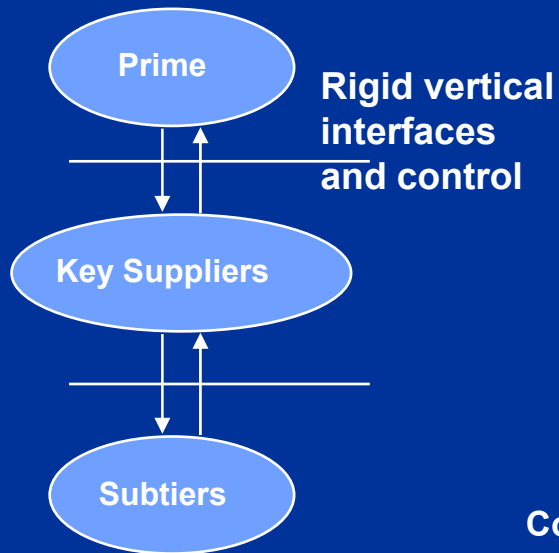


# Project Organization and Contracts

## Traditional Approach



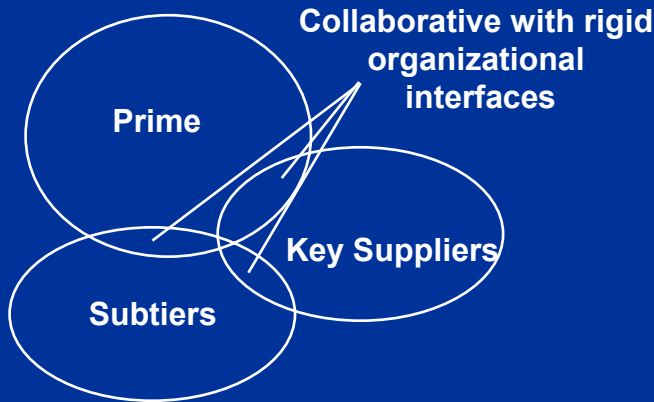
## “Old” Approach



Arm's length; interfaces totally defined and controlled

Rigid vertical interfaces and control

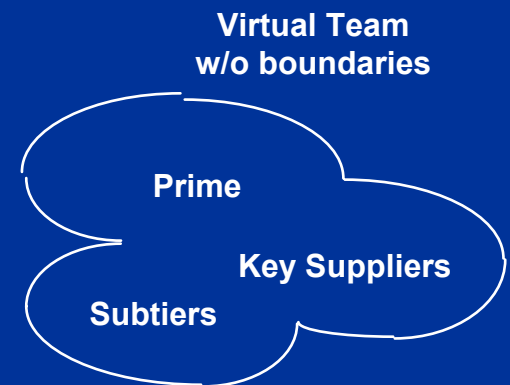
## “Current” Lean



Collaborative; but constrained by prior workshare arrangements

Collaborative with rigid organizational interfaces

## “Emerging” Lean



Collaborative and seamlessly integrated, enabling architectural innovation

Virtual Team w/o boundaries

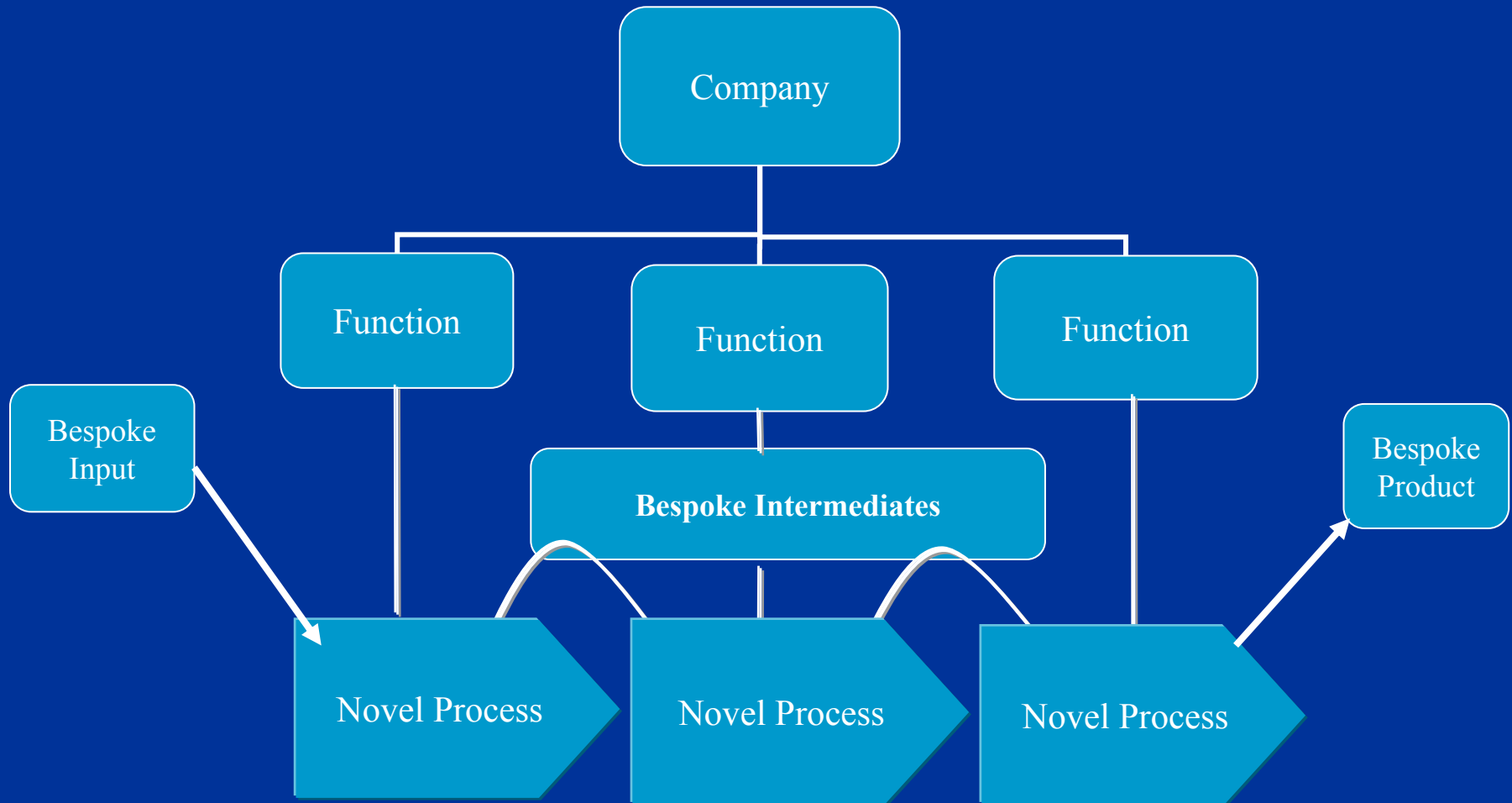
**ARCHITECTURAL INNOVATION: Major modification of how components in a system/product are linked together**

- 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

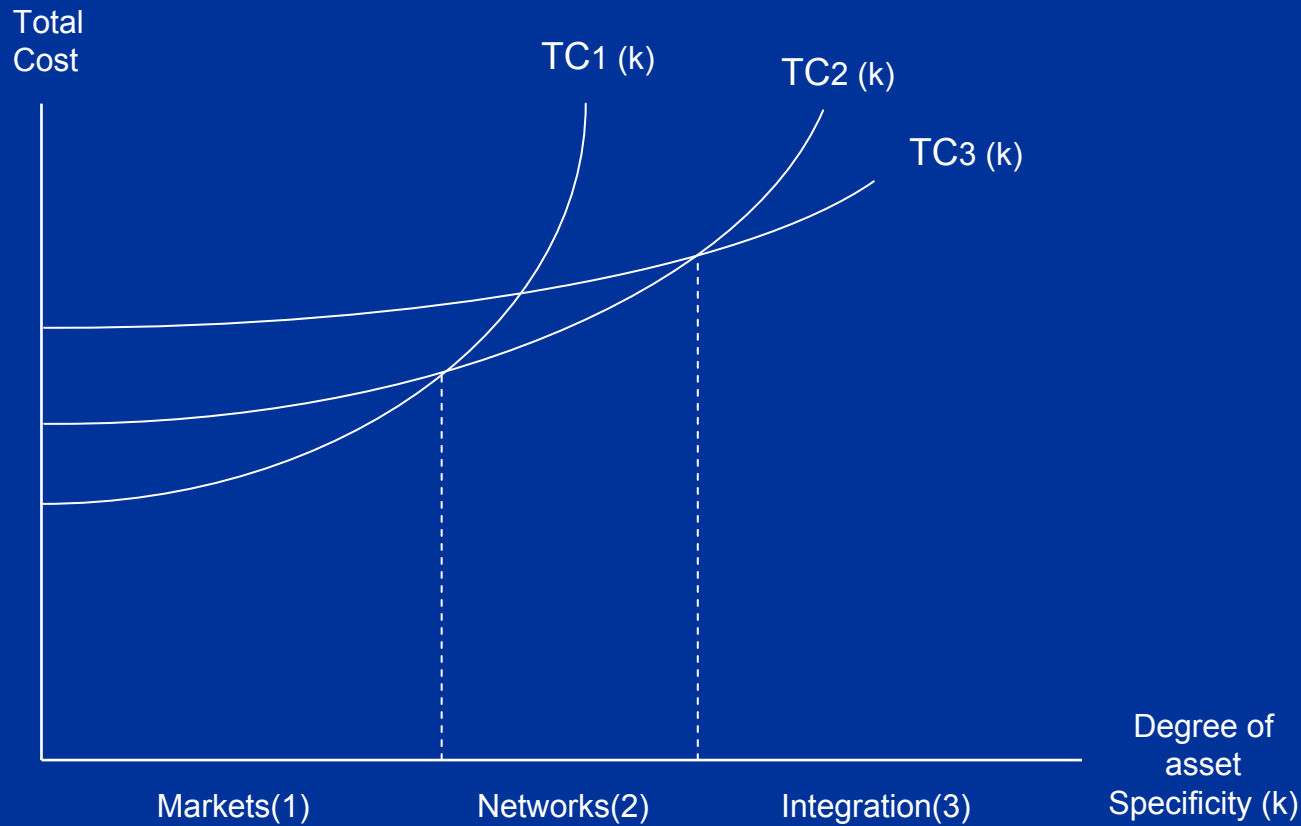
Project based company





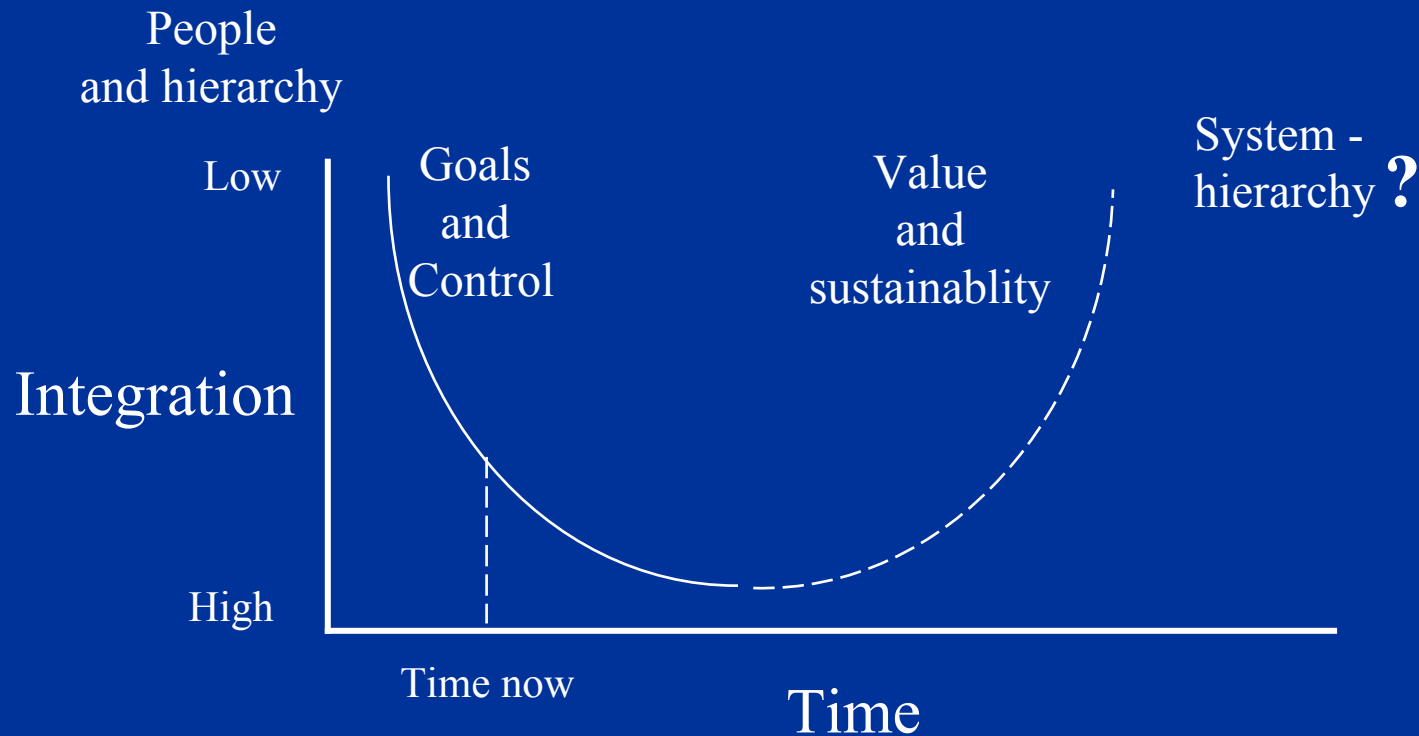
# Project Organization and Contracts

## transaction cost



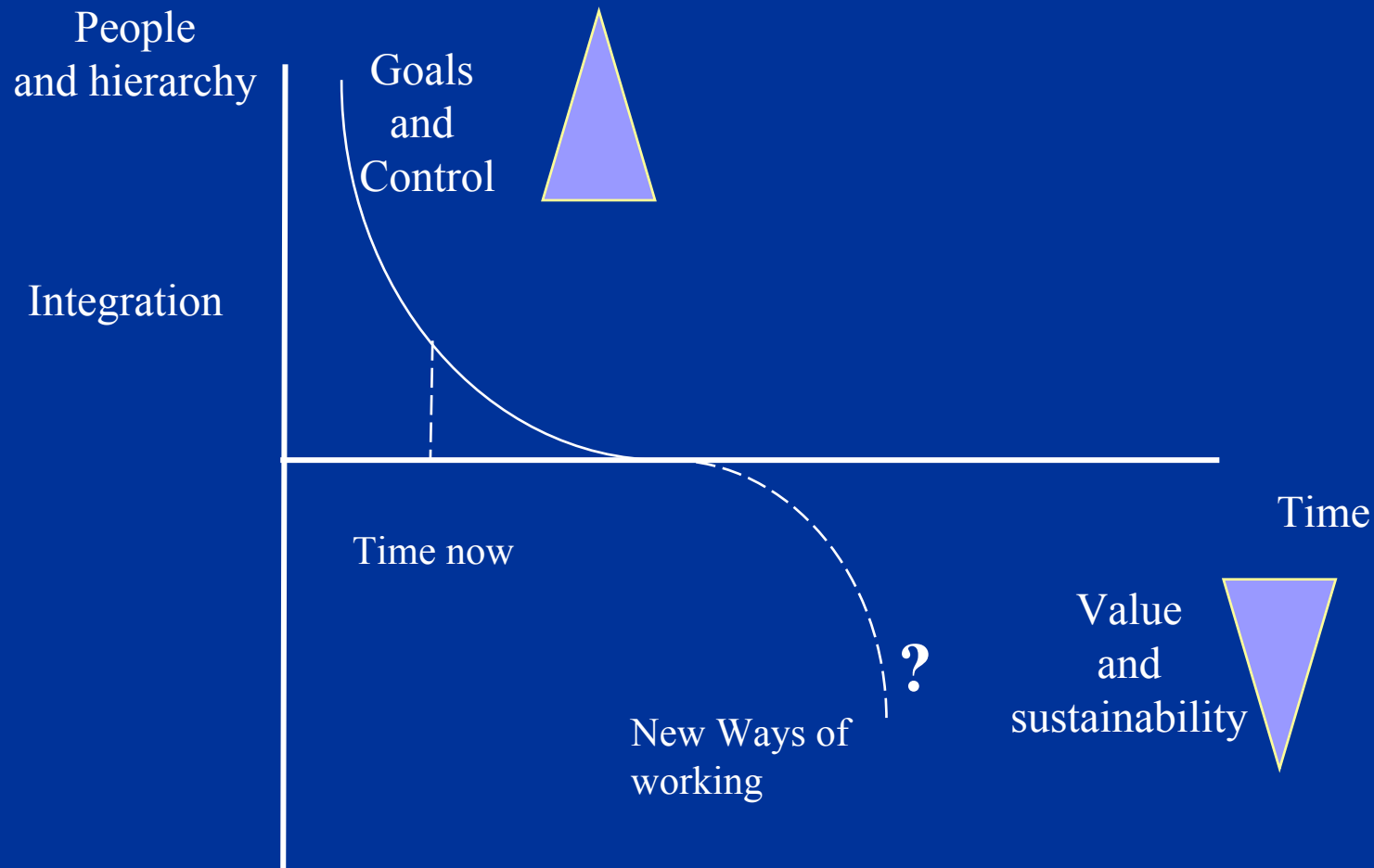
# Project Organization and Contracts

- Evolutions of Organizations

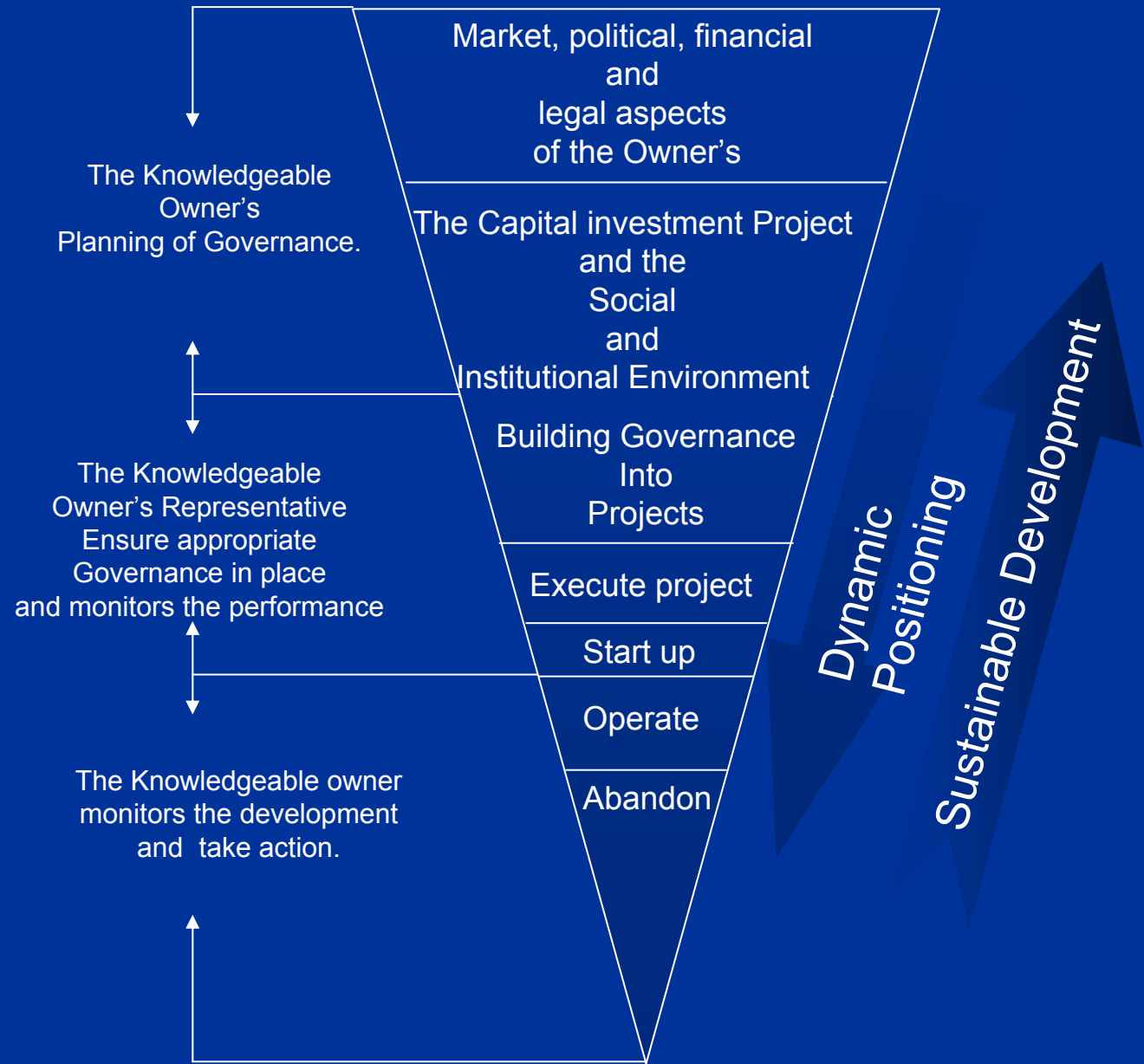


# Project Organization and Contracts

## Evolutions of Organizations



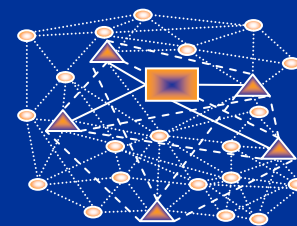
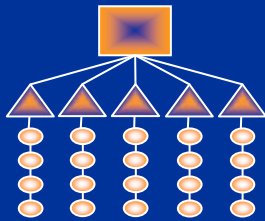
# Building Governance into major Capital investments



# Project Organization and Contracts

## 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




# Project Organization and Contracts

## ■ Questions

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, : 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)

Client		Contractor
<ul style="list-style-type: none"><li>■ NPV</li><li>■ Profit during operation</li><li>■ Optimize operation</li></ul>		<ul style="list-style-type: none"><li>■ Profit during execution</li><li>■ Contractor does not participate during operation</li><li>■ Optimize within the framework of the contract scope</li></ul>

*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.



# Project Organization and Contracts

## 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.

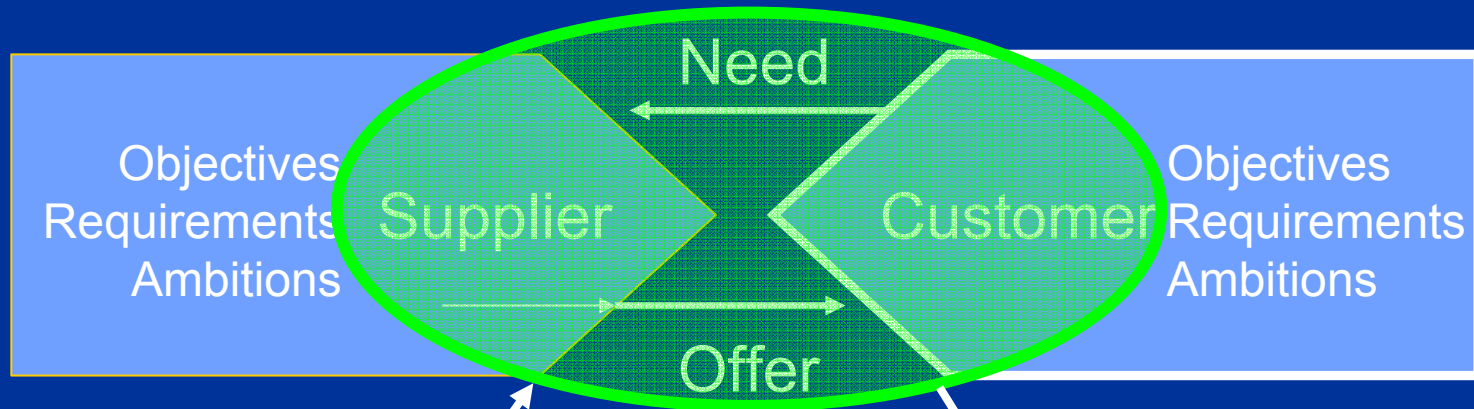


Act in a trustworthy way

# Project Organization and Contracts

## Contract and Risk

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



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

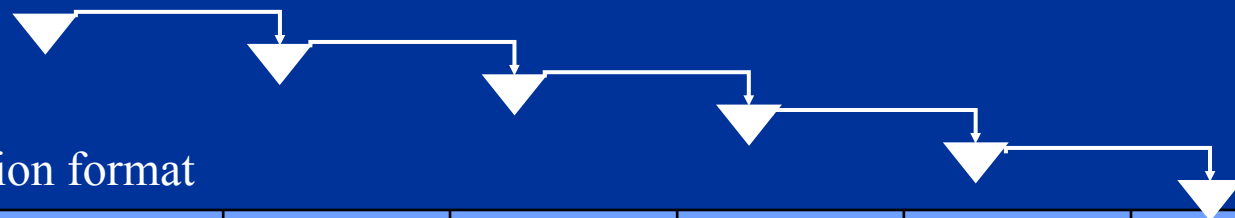
*Estimating and Control of Risk*

# Project Organization and Contracts

## Selection of Compensation format (simplified)

### Selection Criteria

Level of technical definition	High	High	Medium	Low	Low	Low
The Client's involvement	None	Low	None	High	High	High
Market capability	High	High	High	Medium	Low	Low



### Compensation format

	Lump sum	50/50 Target Sum	Unit Rate	Neutral	Day-Work	Reimbursable
--	----------	------------------	-----------	---------	----------	--------------

# Project Organization and Contracts

## ■ Estimating

Identification	Definition	Execution
Parametric $\left(\frac{Q_1}{Q_2}\right) = \left(\frac{C_1}{C_2}\right)^n$	<ul style="list-style-type: none"><li>• Factoring</li><li>• Analogous system</li><li>• Vendor quotes</li><li>• Engineering build up</li></ul>	Unit rates x Quantities
+/- 40%	+/- (30 to 10) %	+/-5%